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Child Health and the Elementary School*

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THE average child presents himself for admission to the elementary school under the coercion of the state or provincial authorities at between 5 and 6 years of age. He comes from a home in which consideration for personal health is largely confined to the treatment of manifest evidence of illness, and a casual concern with the major forms of communicable disease. The treatment program is usually a combination of self-medication with patent medicines or home remedies, and orthodox medical care; the preventive program is largely confined to an avoidance of the so-called hardships of quarantine. His health practices are based on racial custom and economic conditions.

The physical condition of this child is subject to the influence of a number of variables, among which are the financial or social position and the health concern of his parents. It is an even break that he is already handicapped with one or more of the half dozen commoner defects. He has probably received the minimum of medical supervision since the period of infancy. His physical activities have been largely confined to doing the things which were either frowned upon or received only a grudging parental approval, on the street, in the backyard, or neighboring vacant lot. He may or he may not know how to play; he has a minimum of interest in work or sustained effort. His mental health has been favorably or adversely influenced by the emotional or intellectual status of his forebears and the attitude of his parents toward life and its problems. Approximately 2,500,000 such children, well- or ill-equipped physically, are thrust through the school doors for the first time, each year in Canada and the United States.

What can we say about him at graduation? In centers in which consideration for the health needs of children have been ignored, we find that the average child upon graduation has acquired certain health habits, some good, some bad. He has an inadequate amount of sound knowledge in support of the good habits, and less that is condemnatory of the bad. He is un-

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duly influenced by dogmas, either those of his race, his parents, or his teacher. To him, newer health knowledge is merely a matter of supplanting old dogmas with new ones.

His dietary habits are largely the result of the ignorance or knowledge of his parents. Unrestrained, he eats what he likes best, in whatever quantities he can get. He sleeps less than he should. He rests not at all. His exercise is acquired as part of his play or work. His habits, in terms of mouth hygiene, are dictated by the interest of the teacher and the enthusiasm of the parents.

Much, if not most of his interest in cleanliness is the result of his environment. (The fact that the majority of the schools in the Province of Ontario make no serious provision for hand washing does little to direct such interest.)

He has vague ideas how communicable diseases are spread, and is more impressed by hardships associated with the measures directed at their control, than the reasons for the existence of such control measures. His physical condition is probably no better than it was at the time of his school entrance.

These comments may seem to some to be non-pertinent or exaggerated; they are, however, based on an interest in the subject of longer standing than I care, at the moment, to admit. Irrespective of their pertinence, and making allowance for the possibility of a more than warranted somber tinging of the picture, the fact remains that nearly one-fifth of our national population is so placed that it can be readily affected by any well considered scheme for health betterment.

The school is an institution operated by the municipality or state and designed best to equip all of those who are considered educable to meet the manifold problems that confront man in his search for social development and spiritual contentment. Granted a whole-hearted acceptance of such a definition of the school's responsibility, then we would be at liberty to proceed with the consideration of how such a program as we have in mind might best be implemented. There are, however, still many who are convinced only of the pedagogical responsibility of the school; while others who grudgingly subscribe to the definition in principle, are rather perfunctory as to its practice. Personally, I am convinced that the major responsibility of the state today is to make adequate provision for an educational program designed to meet not only the intellectual but the social, physical, and emotional needs of this age group.

Appreciative of your interest, I presume to present my conception of such a program as it affects the health of the school age child. The problem has many facets; its solution implies: a state and municipality conscious of its obligations, an appropriate plant, an informed teacher, a concerned parent, an impressionable pupil, supplemented by an appropriate group of auxiliaries. Let us discuss each of these briefly:

State and provincial health authorities have been conscious for some time of the importance of a constructive program adapted to the health needs of children. In the majority of instances, they have exerted all their influence in favor of a well rounded scheme designed best to meet the exigency of the situation as they saw it. In some cases, however, they have unduly emphasized one aspect of the problem and exaggerated the merits of the suggested corrective agency, while others may not have given this matter all the consideration its importance would warrant. Educational leaders, naturally conservative in their viewpoint, have in the past too often either made restrained gestures of friendliness to the advocates of change or viewed

with concern their visionary doctrines. However, there is every evidence that both health and educational authorities are today prepared to give fitting consideration to any well thought out practicable scheme of school health supervision.

What of the school plant? When an official interest in the health of the school age child was first manifested, much was expected in the way of improvement in the school plant as such. That the hopes of the early proponents of such a program have not been realized is due to a diversity of reasons:

First, the dependence of the elected school authorities on the opinion of architects and building contractors and the failure on the part of these to appreciate fully the importance of what is literally implied by maximum hygienic accommodation; second, the lack of well established leadership in this field by the school health staff; and, lastly, by the fact that the direct relationship between indifferent school hygiene and unsatisfactory health is often difficult to demonstrate.

However, the first evidence of an interest in the physical well-being of the school population by the accepted authorities is a desirable type of school building, adequately equipped to safeguard the health of its occupants. The question as to what is implied by this rather casual observation is not easy to answer. Unfortunately, the average school physician is content to accept as fact the presumptions of individuals who are either long since deceased or those who will directly or indirectly profit financially by the acceptance of the opinion expressed.

The first step in the correction of such an undesirable state of affairs is the establishment of accepted standards based on scientific inquiry. Whether each child actually needs a fixed number of cubic feet of air space, and what that number should be; whether cross-lighting is a more serious defect than insufficient lighting; whether the commonly used type of school desk and seat contributes adversely to the present or future ill health of the pupil; and how imperative is the sustained maintenance of a fixed degree of air moisture; are all questions constantly confronting the school medical officer.

While some of the questions of this type may be readily answered, others present apparent difficulty in the way of solution. Until we are in a position to refute specifically the specious arguments and to overcome, by statements scientifically sound and universally accepted, the evident disinterest of those responsible for school construction and maintenance, little can be expected by way of improvement. I urge that consideration be given to the setting up of such standards.

Presuming that the school plant is at least innocuous, we suggest that the teacher is the next significant factor in the establishing of our program. I do not mean next in terms of importance but next in sequence. Actually, I am inclined to resort to superlatives in discussing the place of the teacher in the scheme suggested. Significant might be supplanted by paramount, for without the interest of the teacher, any serious modification of the existing program savors of futility. With such interest raised to enthusiasm, all things are possible.

May I interject here that my comments are based on my experience in that part of Canada with which my official responsibilities compel familiarity. (I am not speaking of tomorrow—because radical changes are proposed.) The average teacher in the elementary school today spent 4 or 5 years in high school—all too often only 4; she came largely from the rural or small urban type of community; her

background was limited, her interest in health matters negligible, her health knowledge equally inadequate. At no time during her preliminary education was a sufficiently serious attempt made to focus attention on the importance of personal or community hygiene. During the period of attendance at the teacher-training school, whatever instruction was given in the subject was largely of an academic character. The instructor was compelled to spend most of the available time bolstering up the student's limited knowledge of the simple principles of physiology, anatomy, bacteriology, and epidemiology. School hygiene is still considered a rather insignificant subdivision of school management, and presumably receives the instructional emphasis that the space devoted to it in the manual would indicate. This is the inadequately seasoned timber which, until today, has been largely available for the building of the essential framework for your school health program.

What of the curriculum? To date, the only provision made is a fixed period of from 20 to 30 minutes, 1 day a week, for all children in the 6th, 7th, and 8th grades, during which the teacher attempts to interpret the contents of the pupil's text. Neither teacher's manual nor reference text has been available for guidance. However, there is every evidence of change and we await with patience the report of those at present engaged in many centers in curriculum building. How can this change be expedited? If the present attitude of the educational authorities in Ontario can be taken as an index of state and provincial interest, then all that is necessary is to avoid a further deferment of hope by a politic presentation of a practicable program; but it is my feeling that in lagging places, the incentive to action must come from those who are professionally concerned with the health of children.

May I be permitted to review the plan which is already in effect in the Province of Ontario? The academic requirements of present and future teachers have been very definitely raised to include the equivalent of the first 2 years of Pass Arts, plus credit courses to be taken in such subjects as—music, art, agriculture, physical education, auxiliary class management, and health teaching. The course in hygiene in the normal training school is supplemented by lectures and demonstrations given by members of the staff of the Provincial Department of Health. The instructors giving such a course are selected on the score of special qualifications for the post. All students are required to pass a thorough medical examination, conducted by carefully selected groups of physicians, the student paying a substantial part of the examination fee. All students showing a positive intracutaneous tuberculin test receive an X-ray examination of the chest, and all those presenting any appreciable deviation from the physical normal are reviewed by a special medical board prior to admission. A teacher's handbook is at present awaiting final approval, a teacher's reference text is in the process of preparation. The question of suitable supplementary readers and pupil's texts is in the hands of the interdepartmental committee on health teaching. The question of adding hygiene to the curriculum of the secondary schools and making it a requirement for those seeking entrance to the teaching profession likewise awaits decision by the same committee. The credit course in health teaching referred to, is a 5 weeks' summer course. After 2 years' experiment, it received this year the stamp of departmental approval. Further, the Provincial Department of Health assists teachers in securing approved health teaching aids and directional material.

There are gaps in the scheme, but they will be filled and we have every hope that in a reasonable time we will have in Ontario a large body of teachers conscious of their responsibility in this field and reasonably well equipped to assume it.

We previously referred to certain auxiliary agencies who had an implied place in any well considered school health program. The physician, the nurse, the dentist, the mental hygienist, and the physical instructor—what rôle are they expected to assume? Consideration of the activities of the school physician and school nurse may be considered jointly in view of the intimacy of their official relationships. They are teamed for a common purpose, namely, the protection of the present and future health of the pupil. They have approached their task through certain well trod avenues; I fear that in some cases, the footsteps of the pioneers have been so assiduously followed that the paths have become ruts.

Control of contagion, detection and correction of physical defects, supervision of school sanitation, and health instruction are hackneyed terms to the introspective administrator in this field; yet consideration must be given to the respective importance of these various components of an acceptable type of service, for example, the control of communicable forms of illness is an essential requisite to an effective child health program. The objective is sound, the method of approach only is in need of review. School nurses continue to devote 30 per cent of their available time to routine classroom inspections, automatically looking for communicable diseases they rarely find, and hours are wasted weekly in the examination of children seeking readmission to the school after unexplained absence, who have already spent half a day or even more in the classroom to which they are hoping to be readmitted. In the event of an epidemic, one finds equal concern being manifested in those who are found, on careful inquiry, to have already had the disease in question, and those who are non-immune. An active instructional program directed at parent, teacher and pupil and dealing with the recognition of the early and prodromal symptoms of the commoner forms of contagious disease, the value of isolation and the merits of the known immunizing agents is worth years of casual inspection.

The school medical officer spends hours in the monotonous task of examining well children, presumably hoping that he may uncover some potential defect at a stage when a medical Demosthenes could not convince the parent or guardian of the significance of his findings. The records are loaded with reported cases of tonsillar abnormality, malnutrition, and postural defect, which are undiscoverable on second examination. The school physician when employed, and I am not perturbed at the moment by the question as to the ethics of his employment, should be primarily concerned with those children who are physically below par, and he should exercise the same interest and ingenuity in securing the correction of the condition present as he does in the care of the sick who seek his help in home or hospital. The school medical officer has a distinct contribution to make, but too much of his time is often devoted to the perfunctory performance of intangible tasks.

What of the dentist? Again I refer to Ontario—the filling of prematurely decayed teeth is his most time-consuming responsibility. Perhaps if dental predestination due to maternal ignorance during the prenatal period is as true as we are led to believe, this is all there is left for him to do. I am not critical, I merely would suggest

that if it is possible of arrangement, the emphasis be shifted from a service to those unable or unwilling to secure it for themselves, to some well considered teaching effort which will be both practical of application and persuasive of appeal. If we must supply dental treatment to the vast bulk of the children of the country, then let us do it overtly as a form of socialized dentistry not thinly coated with the whitewash of prevention.

The mental hygienist—what of him? The present-day classroom is composed of a varying number of individuals, about 40 in number, each with his or her own degree of intelligence, each with emotional responses sometimes difficult to catalogue, physical imperfections not always easy to diagnose, and social reactions often not readily interpreted. This heterogeneous mass is supposed to be guided toward a vague but common objective by a teacher who at best can merely skim from the top of the pot what appears at the surface after stirring.

Our previous teaching program encouraged the studious child to be more studious and forced the restless soul to greater degrees of restlessness. In our early attempts to aid in a better adjustment of the child to his social and academic strait-jacket, we found the emotionally unstable and potentially psychotic among those viewed with favor by the teacher and the constructively minded among the rebellious. Much of our effort was viewed with veiled scepticism by the less well informed teacher, who believed that mental hygiene was concerned solely with the removal from among her pedagogical responsibilities of those with an intelligence quotient below 80. Unorthodox behavior and evidence of emotional instability were, to her, classroom problems which could be handled by disciplinary measures. It has taken much in the way of persuasion to impress on such teachers that it is the psychologist and not the psychometrist who is best equipped to fend off the need for the psychiatrist. Fortunately, the true mental hygienist is a happy blending of all these and truly he has a place in any school health program.

The physical educator had an established status in the school prior to the advent of the school physician, nurse, or psychologist; he was originally a drill instructor, owing his position to the inclusion of a modified form of military drill in the school curriculum in Ontario. Friendly rivalry between neighboring schools as to smartness of appearance and skill in maneuvers kept this movement alive after even its most ardent advocates could no longer defend it on the score of its contribution to the physical fitness of the bulk of the school population. Formal gymnastics introduced by admirers of the German and Scandinavian systems of mass physical activity were avidly seized upon by those groping for some synthetic substitute for the more spontaneous types of exercise. The innate instinct which prompts a child to jump, climb, throw and run could not, however, be long misdirected in unnatural channels, and today we find the leaders in this field not only appreciative of the necessity for providing exercise suited to the needs of each child, but likewise awake to the fact that only that type of physical effort that intrigues and maintains the interest is likely to have any material health significance. Pleasurable periods of relaxation, intriguing forms of group and individual activity are now part of the well ordered school program. Physical activity is an essential factor in optimum health. It is integrated into our work and play from infancy to old age, and directly or indirectly influences man's moral and social habits as well as his physical behavior;

but I might warn the ultra-enthusiast that it is neither the be-all and end-all of child health, nor the panacea for all the ills of mankind.

In conclusion, I would say, first, that much that has been done in the field of school health has been done well and may serve as a useful basis for future effort; much, however, has been indifferently done; and some should never have been attempted. Second, that a well directed interest in the present and future health of this age group is a responsibility jointly shared by the educational and health authorities. Third, that the grade teacher is the individual who has the greatest single contribution to make to any worth while type of school health program, and the special fields of effort with which most of us are concerned, are merely designed to aid the teacher in the better doing of his or her job.

Sunlight and Health

THE number of abnormal conditions primarily and specifically benefitted by sunlight, natural or artificial, is small in comparison with the number for which such claims are made. Sunlight constitutes one of the benefits of an outdoor life; it is one of the elements of climate that make for physical and mental well-being: in extrapulmonary tuberculosis, when judiciously used, it aids and promotes healing; in rickets, certain wave-lengths are specific; but these facts do not justify the extravagant claims made for it as a vitally necessary curative and preventive agency.

Certain diseases and disabilities are partly due to deficient radiation, and doubtless the health of the community may be improved by providing more artificial radiation where sunlight does not reach the small minimum required for health; but sunlight is only one of the many environmental factors that influence health. Climate in its relationship to health is not merely a question of sunlight, but of fresh air, wind, temperature, humidity, altitude above sea level, etc., as well. . . . Sunlight plays a subordinate part in the regulation of physical and chemical processes that make up the life of normal man, who can get along with little or practically none of it, provided his diet be adequate and that he take care of himself in the way of getting plenty of fresh air, sleep and exercise. . . .

Owing to the hypersensitivity of many infants and adults caution should be used in the use of sunlight, both natural and artificial. Over-indulgence, even in the normal, is foolhardy."—Henry Laurens, Professor of Physiology, Medical School, Tulane Univ. *The Scientific Monthly, Apr.*, 1936, pp. 312–324.

Effect of E.R.A. on Local Programs*

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THE four agencies in Minneapolis chiefly affected by E.R.A. health and nursing projects were the Health Department, the two public hospitals, and our own association in conjunction with the Department of Public Relief. The two ventures upon which I wish to dwell are, first, that of our City Hospital, and that with which our own organization was associated.

A year ago, when their project started, the Minneapolis General Hospital had on duty approximately 45 general duty nurses, and 135 students. They were faced with the opportunity and the problem of absorbing 75 graduates. They did it, and did it with satisfaction to themselves—to repeat, they added 75 nurses to a general duty staff of 45, and did it successfully almost over night.

The group was composed largely of recent graduates from a number of schools. One problem was introducing them to the routine of the General Hospital as quickly as possible. Motion pictures of certain procedures were helpful. They were of making the empty bed, postoperative bed, showing the morning and afternoon toilet, and the bed bath. The nurses were divided into smaller groups for demonstrations of certain special treatments, such as hypodermic technic, catheterization, etc. A head nurse was assigned to look after the group. The nurses were placed where their experience and their special interest indicated, excluding only the operating room, and for the most part night duty.

This plan worked, and made unquestionable contributions. To the patients it meant more complete care. To the students it meant that they were engaged in only such nursing activities as were educational. To the E.R.A. nurses themselves, it meant experience in a large hospital and an opportunity to demonstrate ability. Nine of them have taken civil service examinations and are now regularly employed at the hospital. This set-up lasted just long enough to show that it could be handled. However, as restrictions became more closely drawn, the 75 nurses dwindled to 8, and when the E.R.A. work terminated last August, it was not a particularly significant project.

The hospital had at that time, however, another project, the cessation of which was a serious handicap. During the past year maid service had been supplied up to as many as 75 women at one time. They had not had formal introduction as had the nurses, but had been assigned to head nurses according to the requisition of the latter. They relieved the nurses of much work which they had of necessity been doing. Julia Miller, R.N., superintendent of nurses, writing about this in July said, "At present it would be impossible to function at all, at our

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present standard of nursing care, without the E.R.A. maid help. Every hour of the nurses' time is thus made available for patients' care."

The E.R.A., I might add, penetrated to practically all the departments of the hospital, out-patient, business office, store room and sewing room, laundry, electro-cardiograph department, diet kitchen, record library, laboratory, and X-ray department. Why all this help could be utilized is indicated, I think, by the fact that in 1934 the patient load had increased over 1930 by 35 per cent, and the expenditure had made only half that increase.

And now, postponing comment, I will turn to the other project, the visiting housekeeper project. This was set up by the Department of Public Relief primarily for families on relief, and fitted into the framework of the Visiting Nurse Association in the belief that the nurses with their intimate contact with families could guide and utilize it to excellent advantage. The Visiting Nurse Association provided office space, transportation, and supplies. In conjunction with the nursing staff of 40, and later of 65, there were for 14 months an average of 5 nutrition workers directing 61 housekeepers.

The purposes of the plan were two; to provide a project for women on relief, and to assist families on relief in budgeting, buying, menu planning, and household management. The plan was to have the housekeeper make effective the teaching of the nutrition worker by demonstration in the home. The nutrition workers were carefully selected home economics graduates. One acted as director of the project, and the others were assigned to individual districts where they were in daily contact with the nurses, and exposed to the nurses' daily work. We were fortunate in having a group which grasped the nursing program and many of its potentialities and problems very quickly. We were allowed free selection also of the women who were sent to us for housekeepers; if because of personality or experience one seemed unsuited to the program, she was not retained. Each housekeeper came first to our central office where she met the director of the project, who discussed her experience and her special aptitudes. She gave the housekeeper a general idea of the program of the association, and stressed her responsibility in representing it. The housekeeper was then assigned to one of the nutrition workers, and thereafter reported to her. The nutrition worker took up any case on which she planned to send the housekeeper in detail with the latter, went with her to introduce her to the home, and if it were a long time case visited occasionally. If one of our nurses was active on the case the nutrition worker did not make supervisory visits unless there was a special problem. Classes were held for the housekeepers twice a month at our central office, the subjects including food essentials, getting the most for your food money, planning well balanced dietaries, diets of children, and stretching the clothing dollar.

The nurses too received a great deal from the nutrition workers. Since many of the families which we were carrying were on relief, it seemed perfectly justifiable for the nutritionists to devote part of their time to promoting their service through the nurses, and they held classes in the substations, at first every 2 weeks, and later once a month. Both the nurses and the field workers in the Department of Public Relief turned to the nutritionists frequently for advice and guidance for individual families.

Just how the service functioned is illustrated briefly in the case of the Beck family. The nurses had known the family for several years. The

mother had died of tuberculosis leaving Mr. Beck and three daughters, aged 17, 15, and 12. They were on relief, and Mr. Beck was doing his best to keep house adequately. Nevertheless, last summer the girls had lost considerable weight, and at the nurse's request the nutritionist visited the home. Finding Mr. Beck fairly intelligent, and very eager for help she explained the principles of good nutrition to him, and left with him some low cost menus and recipes. As the nurse was not active, the nutrition worker made a return visit. Mr. Beck had maintained his interest, and was including green vegetables and 4 quarts of milk in the diet, and carrying out suggestions in various other ways. The nutrition worker invited him to attend a bread making demonstration, with the result that he became an enthusiastic bread maker. As he did not understand the preparation of certain foods, and was anxious to do some canning, a housekeeper was sent to the family for several days. Mr. Beck asked for suggestions for school lunches for the children, which were provided. At the end of the summer the daughters had gained weight, the lowest amount being 7 pounds, the highest, 11.

I have cited this rather simple case to show the interplay between nurse, nutrition worker, and housekeeper, and the assistance which an untrained person can receive, if he desires it.

Last autumn a few of the particularly well adapted housekeepers were selected to give demonstrations of preparation of certain low cost foods at several of the settlement houses. Twenty-one demonstrations were held with an average attendance of 16. The project did not continue long enough to demonstrate to what extent this might be developed advantageously.

The project terminated with our organization last March because at that time the State Emergency Relief Administration felt that it could not be continued with the amount of supervision which we considered essential. We were sure too that it would be maintained under some plan by the Department of Public Relief. This proved to be the case; the project went on in much the same way in that department until August when the housekeepers were discontinued.

The question is, I think, what it accomplished, and what remained as residue after it terminated. What it meant to families is evident. They gained much or little, according to their intelligence and interest. When it was over the Community Health Service had on its staff one nutrition worker, for the Community Fund had agreed that nutrition teaching was fundamental to public health work. The project left us too with a staff of nurses conscious of nutrition and appreciative that it is a fundamental part of health teaching. They are turning to our nutrition consultant for assistance as they probably would not have done had they not had the more intensive experience.

The Relief Department still retains 4 nutrition workers on the S.E.R.A. administrative pay roll. They are acting as consultants to the field staff, having classes and conferences much as our own nutrition worker is doing.

E.R.A. is ended, the W.P.A. and possible other governmental enterprises are before us. Our experience, as I have indicated, was a happy one. E.R.A. workers were never substituted for staff personnel; they were an addition to it. According to our ideas of a few years ago, hasty development of so much service as indicated to the General Hospital and Community Health Service, would have seemed impractical; yet the plans worked, they contributed to patients and to the agencies, and they were worthy of the workers.

Comparative Value of State Districts and County Districts as the Basis of Local Health Organization*

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A SOUND public health program must operate economically as well as effectively. A small unit of population as the basis of organization means either an inadequate service or a high per capita cost. It matters little in the long run whether the funds be derived from local, state, or national sources. Even the gifts of philanthropists must be expended with an eye to the time when those gifts will cease and the organization must be supported from taxes. A splurge of spending means a later readjustment which may be not only painful to the employed personnel but disastrous to the community.

During the past 20 years the county as the unit of local health administration has been so vociferously acclaimed that other methods have not received the consideration to which they may be entitled. There can be no quarrel with the contention that whole-time service is a necessity both in directing and operating effectively local, as well as state and national, health organizations; nor is there objection to be found to the county as the unit of local organization, provided the county contains a sufficient population, sufficient wealth, and sufficient intelligence to support and operate a health department commensurate with the local needs.

That these qualifications are not universally satisfied is easily demonstrated by the census figures of 1930, which show that among the 3,072 counties of the United States, 10 had less than 1,000 population, 250 less than 5,000, nearly a quarter less than 10,000, 40 per cent less than 15,000, over 55 per cent less than 20,000. Over 90 per cent of the counties in the United States were organized before the telephone, the automobile, and good roads made their contributions to communication.

Within what limits of population a health unit can operate effectively and economically has not been determined with any precision. It is not a fixed figure for all present services for all parts of the country or for all time. Our concept of the content of the public health program will change with time quite as surely as it changes with place today. However, there is certainly a lower population limit, and at least one-half of the counties in the United States are below it.

There is probably an upper limit also. The large cities of New York and Baltimore have felt the need of decentralizing and are working toward the establishment of district organizations,

* Read before the Florida Public Health Association at Orlando, Fla., December 2, 1935.

without, however, surrendering the authority of the central office, exacting payments from the districts as such, or supplying personnel and services in accordance with the taxes derived from the areas served.

The vast propaganda for county health departments has two serious evils which must be substracted from its unquestioned benefits in reaching a balance. In the first place, it has emphasized a *name* which covers a variety of services ranging from very little to something approaching adequacy. A whole-time health officer is the single qualification required for admission to the glorified list of "organized" counties. A budget of $4,000 which pays the salary, traveling, and office expenses of a whole-time health officer places a county among the anointed. This is a distortion of values, gives on the one hand a feeling of security and superiority unwarranted by the facts, and on the other arouses alarm over the state of the nation, four-fifths of whose rural territory is not protected by a locally employed whole-time health officer. At least every one in health work has heard of Cattaraugus County, N. Y., and Rutherford County, Tenn., and when the term county health department is used some such organization is visualized. There is as much difference in the existing county health departments as there is in the automobiles seen on the highways.

That there is little to be hoped for in providing the accessory personnel and expenses necessary to the performance of a good journeyman job of health work in small rural counties is attested by the history of these organizations. "Progress," in certain states, consists almost entirely in the establishment of more of the same kind of inefficient or semi-efficient "units." Mountin [1] states that "the budgets of rural health departments tend to remain on a constant low level." Certain state health officers have sought to overcome the difficulty of small county organizations by the consolidation of two or more adjacent counties into districts of suitable size, relying upon their persuasive powers and a subsidy to obtain the consent and coöperation of local authorities in such an arrangement. That these consolidations are difficult to accomplish is indicated by the fact that only 21 of them, comprising 57 counties, were existent in 1934; that they are instable is indicated by the number that have been discontinued or re-grouped.

It is questionable whether anything less than reforming our counties on the basis of modern facilities of communication and modern needs of public service can make the county universally satisfactory as the unit of local health administration. Until this reformation is brought about, such counties must be left in outer darkness, find a suitable and willing mate in the neighborhood, or another method must be developed which will deliver the health service to which every community is entitled.

The second evil to be charged against the propaganda for county "units" is that its very effectiveness has succeeded almost in monopolizing the thinking of public health administrators, of those responsible for the health activities of the philanthropic foundations, of the rank and file of official and voluntary health organizations. The alternative method of state health districts has not received the consideration it deserves. It has never been thoroughly explored in theory and until recent years has not been carried in practice beyond its primitive beginnings. That it possesses potential advantages which in certain respects outweigh those of the county health department I hope to demonstrate in this paper.

1. Under a broad permissive law such as that in New York State, the com-

missioner of health may create any number of sanitary districts, being limited solely by the number of district health officers provided in the legislative appropriation. Either within such a limitation or one specified within the legislative act itself, districts may be established which provide an area and population suitable to the requirements of efficient administration. The effort ordinarily necessary to "sell" a county health department to a reluctant county board can be applied with equal or greater advantage to the state appropriating authorities.

2. Such a system provides a sound foundation for "a career service in which standards of ability and professional qualifications constitute the exclusive basis of preferment."[2] With out such a foundation a career service in public health must ever be hazardous, dependent, beyond the current term of office, on the vagaries of local politics, local prejudice, local whims. It is common experience that a local appointing officer or board will appoint a non-resident only with great reluctance, whereas they will accept a non-resident appointed by an outside authority without resentment. His subsequent success or failure is a matter of his personal and professional qualifications.

Within an established corps, promotion can be systematized, ability rewarded, and mediocrity absorbed in subordinate positions. Individuals exhibiting a flair for some specialized branch can be aided and encouraged to perfect their training in that specialty with assurance that a suitable outlet for their abilities will be available. Such a career service can best be protected by an established state civil service including other departments of the state government.

3. The selection of the district health officer, the determination of the number and quality of accessory personnel under him, and the operating expenses can be based on the needs of the district and not on its ability to pay. To quote again from Dr. Bishop's presidential address[2]: "frequent observations show that the regions with the smallest resources are confronted with the largest need for health service." This is true also of other government services, notably education, and the situation is not met adequately with grants-in-aid that require matching by local funds. No city apportions its services to its several wards according to the amount of taxes collected from them respectively. Nor does it demand that in order to receive a service a section shall pay an additional price. Why should the state make this demand?

As a matter of fact, need and ability to pay probably show an inverse correlation of a very high order, and the same justifications that exist for grants-in-aid hold for supplying the services without conditions. That epidemics know no local political boundaries has become a platitude. That the uncorrected defects of childhood and the neglect of such chronic infectious diseases as tuberculosis and syphilis may impose their later burden of expensive care on a community far away from their origins is not so well appreciated. Americans are migratory—23.4 per cent of the people enumerated at the census of 1930 were born outside the state in which they were residing. We have no figures on the unquestionably greater migration within state boundaries.

4. The poorer districts need in all probability not only more personnel per capita, but a better trained personnel and a directing head of the highest order. The reverse obtains under ordinary circumstances. The small "organized" county with limited resources is the one with the untrained or inexperienced health officer with no assistants, who, if he be young and ambitious, looks upon it as a stepping

stone to something better. He receives such direction, supervision, and advice as a director from the central office can spare him in common with perhaps 20 to 70 others. As the health officer of a small district he probably receives less attention than his more "important" brethren. Would it not be better for him, for the district, and for the service, if his district were part of a larger one, if he were an assistant on a larger staff, if he were learning under direct supervision, if he were acquiring training in handling subordinates, in using clerks and stenographers? Would not the sanitary inspector work better under the supervision of a sanitary engineer, the nurses under a supervising nurse? The lives of some of these supervised people might not be any happier, but I am sure that, whatever their monthly reports might say, their work would be more purposeful and more effective. Accompanied by appropriate reading, this in my opinion far excels as a training program anything to be expected of a "short course" in a public health school or a "training center." It can and should be designed not only for health officers but for sanitary engineers, inspectors, and nurses.

5. As a state district is not fixed by a unit designed for general governmental purposes, its boundaries may be changed from time to time with a minimum of formality. County lines are usually observed to avoid more than one district officer's dealing with the same county board, but a county may be transferred from one district to another or even made a separate district with little disturbance. This is a decided advantage over the county unit system since it provides a coverage for the entire state, which even though it may be thin is not so thin as that to be expected from a central office. The size of the districts may be adapted to the capacity of the officer in charge, and districts may be subdivided and readjusted as personnel is acquired and trained.

6. The personnel being appointed and paid by the state, the authority is direct, there is greater identity of purpose and there can be a higher degree of uniformity where that is desirable. At the same time, it does not interfere with careful experimentation in the field of administration. This centralized authority also permits prompt concentration of personnel at points of particular danger as in epidemics or disaster.

7. It eliminates local politics, especially if more than one county be included, from the selection of personnel and headquarters, the making of purchases, and prevents the other devious devices which tend to reduce efficiency.

8. Highly specialized services provided by the state, such as for orthopedics, tuberculosis, syphilis, maternity and infancy hygiene, etc., can be readily integrated. These may cover more than one district. In the case of a large district or a specific problem, a specialist may be assigned.

9. It is more economical than dissociated units. Supplies can be bought more cheaply through a central bureau and the quality of the materials insured. Personnel of higher quality can be employed for the same or even lower salaries than are paid by local governments. The increased security against dismissal or demotion for arbitrary or extraneous reasons, the greater opportunities for promotion, the larger opportunities for self-improvement are attractions that appeal to men and women of the type needed in public health work. The problem of recruitment is thereby made less difficult.

It has been stated or implied [3] that local financial and official participation are essential to the acceptance and maintenance of good local health work. Lumsden cites the discontinuance of the

district system in Vermont after 4 years' experience with it "as an illuminating example of a state doing more than its proportionate part in local health service." I will not comment on the social philosophy which apparently underlies that statement, but merely point out the lack of evidence which would warrant the conclusion.

Ten state districts were established in Vermont in 1919, each with a district health officer. The total appropriation for district work was $40,000 per annum or an average of $4,000 per district. Presumably therefore there was no accessory staff and no district office. We are not informed as to the personal and professional qualifications of the district officers, whether they embarked on a program of wider usefulness than the part-time local health officers whom they superseded or fell into the rut of routine. In retrospect at least, one may question the wisdom of the precipitate creation of so many districts in so small a state. Fewer districts, each better implemented and giving a more varied and intimate service, might have survived.

Despite this casualty there are 6 states which have district systems without local participation.[4] Four have been in existence for over 20 years, 2 others for over 8 years. It is readily admitted that they have not been developed as they might have been with the possible exception of Delaware, which operates 3 state districts in its 3 counties. In part, this may be due to the difficulty of obtaining the necessary legislative appropriations. But in greater measure it may be due to a continuance of the original policy of supervision of local personnel, and failure to recognize and test the potentialities of the state district as an operating agency. As to its capacity for gaining local interest and support, the district system in New York State survived a concerted attack in its incipiency due to the support it received from people throughout the state. It has never been questioned since.

The results from increasing our district staffs in New York State during the past 5 years have been such as to encourage a continuance and expansion of this policy. It is not intended that this shall discourage the establishment of more whole-time health departments in counties desiring a more complete service than can be provided at present by the state. It means rather a change of emphasis. Our experience with the additional personnel made possible by a grant from the Rockefeller Foundation and last year's federal aid, has shown that it is possible to integrate the state and local services in rural districts and to supplement the local services in cities in a highly satisfactory manner. Relieving the district officer of much of the routine and emergency duties is making possible purposeful efforts in the prevention of syphilis, tuberculosis, and infant and maternal mortality. As personnel and experience are acquired, other imperfectly developed fields can be cultivated with greater promise of success than with locally operated departments.

Public health work in this country is at a critical point. The passage of the Social Security Act has authorized the Congress to appropriate considerable sums of money for grants-in-aid to our states and territories. Upon the wisdom and the integrity with which these funds are spent will depend not merely their continuance but perhaps the continuance of existing appropriations from state and local governments. I am not thinking of the possible "drying up" of local appropriations through a shift of the burden to the national government. I am thinking of an actual revulsion against health work if the money be diverted to serve personal or partisan purposes; if it be spent foolishly or extravagantly by the

well intentioned. The former can happen despite the qualifications that may be required for professional personnel; the latter can happen through grants that are not proportioned to the need or that exceed the capacity of the state or local health organization to administer.

There is some reason for concern in the emphasis placed on grants to local health departments in the tentative proposal of the Surgeon General for the allocation of funds under Section VI of the Act. Restricting the amount available for the central state health department to a fixed fraction of the total allotment may result in the maintenance of those departments at a level incompatible with efficiency. They will thus be unable to furnish either the amount or the quality of service to the local departments that the latter require. The quality of the work of the state health department largely determines that of the local departments. Rarely do they rise above it. When they do, it may well be a cause for shame that the state standard is not higher, rather than a cause for pride in the achievement of a local unit. The state must be prepared to furnish not only a high order of administrative guidance but a high quality and recognized leadership for the essential specialized services.

The proposed regulations of the Social Security Act provide that aid may be given to full-time district organizations, and state created and operated districts are therefore equally eligible with those established locally.

I submit that local interest and support can be developed for a system of state districts each under a whole-time health officer as well as for a system of locally operated departments. Public health service always expresses itself locally, whether in services to an individual, a family, a group, or to a community. Where that service comes from and what agency furnishes the funds are of less moment than the quality of the service and the spirit in which it is given. The state district system provides a service that can be superimposed on any existing system without undue delay or disruption, a universal coverage, not a mottled one, a service adapted to local needs rather than local wealth.

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Integrating Mental Hygiene*

From the Point of View of the Public Health Officer and School Physician

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THE keynote of enlightened attitude toward mental hygiene in the field of public health was sounded several years ago by the organizer of this Special Session on Mental Hygiene. In his wisdom and critical prevision Dr. Haven Emerson stated what has now become a well known accepted dictum:

> We have arrived at a point in the organization of our national effort for health where advances in the fields already preëmpted and liberally supported by public opinion and resources must wait for their entire success upon a fair beginning and progress in the most delicate and difficult and yet the most promising undertaking of all—the prevention of nervous disorders and mental defects.

The facts of the need and importance of mental health problems have been abundantly driven home statistically, through personal and group experience, and otherwise. We shall therefore proceed directly to the nub of our assignment, bringing to the front facts which make for collaboration between the public health officer and the school physician for the purpose of protective and preventive mental guidance of school age children. Our chief concern will be with definite practices and organization under official agencies of services directed toward the prevention and control of mental disease, and their precursors, personality and behavior disorders or maladjustments.

Perhaps the most fruitful approach to our collaboration is to begin with concrete examples of points of view with respect to mental hygiene, expressed by health officers and school physicians. If one is to be helpful to another, he must first gain an intellectual, but particularly an emotional, understanding of the facts under consideration; he must be able to put himself into the shoes of the other person in order to sense his mind-set and feel with him in his problems. Let us therefore swing into center-stage position the reactions of a number of public health officers and school physicians to our topic, keeping in mind that over 60 per cent of school physicians also function as public health officers in New York State. We shall first record the physicians' comments, follow them with an attempt at interpretation and evaluation, summarize these facts, and finally present a few concrete recommendations designed to enhance integration of mental hygiene opportunities and obligations. The substance of the remarks of certain health officers and school physicians relative to our topic follows:

1. " The average public health officer

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and school physician looks at mental hygiene as something beyond him. It really is not, but it seems so because he steers shy of it. Psychiatric language and technic is often so far removed from the practitioner's understanding and utilization that he does not take a serious interest in it. If he would only get into the habit of consciously applying mental hygiene principles and practices, he would soon realize his capacity and its value. It is something every physician can apply in his everyday practice. For example, during the physical examination of the school child, the physician has an unrivalled opportunity to inject mental hygiene attitudes and habits relative to the physical examination findings and the child's reaction to them.

"We must get away from the old idea that the doctor is only to detect physical defects. He must learn to prepare the child for the health education values of the examination by talking with and to the child; not merely examining him manually or with impersonal diagnostic instruments. His main job is to help prepare the child for healthier, richer, and happier living, chiefly through habit training in the maintenance of health and the prevention of illness.

"The proper emotional acceptance of the physical examination facts is essential. But the physician must not neglect tactful inquiry into the child's ways of living. His main contribution is assisting in the education of the child in the art of living—healthfully, wisely, happily and to the optimum of his potentialities."

The time factor was raised to which this former public health officer, school physician and school medical inspector replied: "The doctor has plenty of time. It is a part of his work, but he does not know it."

Asked how he would "put across" a better mental hygiene attitude and practice to school physicians and health officers, he replied: "The method will have to be individualized and explained in different ways to meet personality types and individual needs. Two-way conferences are perhaps best. Herein the physician has an opportunity to raise problems of interest and concern to him. The discussion conference under the chairmanship of an experienced leader multiplies the educational values of topics discussed through 'contagion.' Others are impelled to pool their experiences to clarify conceptions and that to the benefit of all concerned. The physician may be exposed to facts he already knows, but he gets to see them in a new and more significant light which in turn leads to more effective application of them."

2. "Most school physicians do not know what the words 'mental hygiene' mean. Their general attitude is unfavorable toward mental hygiene. An occasional doctor is all for mental hygiene, especially the full-time school physician. The part-time practitioner has not time to think of mental hygiene; he is too busy with obstetrics and other concerns of his private practice."

3. "My first concern in examining a child is to note whether he appears to be well adjusted, well poised, happy, or whether he is fidgety, tense, or nervous. Evidences of the degree of personality integration can be observed before one can accurately note the child's color, nutritional status, and the details of the various organ-system examinations. Too often, the first and often the only concern of the school physician with the maladjusted pupil is to recommend him to be dropped or exempted from school. He does not seem to be interested in the pupil's further plans and welfare."

With respect to psychiatric part-time service to schools and colleges this school physician stated: "The

inability of the psychiatrist to give sufficient time to the treatment of maladjusted pupils makes his services often unsatisfactory and less convincing. Full-time psychiatrists on the teaching faculties of schools and colleges would help fill a patent need."

Asked as to the need of special training of school physicians in mental hygiene for better serving this part of their work, the informant answered: "The main thing is to use good horse sense."

4. "A few outstanding school physicians see the importance of mental hygiene in handling the child. It colors their outlook and understanding of the child's adjustment to life. They see the whole child.

"Many older physicians have a keen eye for mental hygiene values; others just ignore it and the understanding of problems of pupil adjustment. The recent graduates seem to be doing a better job, perhaps due to better medical school training in this branch of medicine. They see the whole child and have his total interests and welfare at heart.

"The school physician could get much help from teachers in gaining an understanding and handling of pupil maladjustments. The full-time physician usually coöperates well with the teachers. Teachers are usually better prepared by training and experience than the physician in understanding and handling behavior and personality difficulties of pupils. The teacher has the advantage of being in intimate contact with the child some 5 to 6 hours each day. However, the teacher needs the advice of the physician, especially in evaluating his physical status. The school physician could and should be trained to interpret most cases of pupil behavior difficulties and emotional maladjustments, and to treat these quite effectively. The more serious cases should be referred to a psychiatrist attached to the school staff, child guidance clinic, hospital dispensary or the psychiatrist in private practice."

Asked how a school psychiatrist could utilize his time to best advantage to the child with respect to the early recognition and correction of emotional, personality, and social maladjustments, this school physician replied: "Working with the teacher. It is she who is in closer contact and for a longer time with the child, and therefore could do a better preventive mental health job.

"The school physician can play an important rôle in corrective and in positive mental hygiene. The teacher, upon discovering a maladjusted child, usually refers him to the school principal or superintendent who in turn usually seeks the advice of the school physician and school nurse. If the problem seems to need more specialized analysis, psychiatric service is sought.

"Not infrequently, the teacher herself is maladjusted, and is not in a position to understand and handle pupil maladjustments. Thus psychiatric and mental hygiene service should also be available to help teachers handicapped by personality problems.

"The mental health examination should be an integral part of the general physical examination. This is not being done to any great extent at present. The concern of the school physician should extend beyond checking off the mere presence or absence of 'mental abnormality' on the physical examination form.

"The mental health service given by the school physician could be materially improved by realizing the need for special education and clinical experience in this specialty beyond that which he obtained at medical college. Summer and extension courses such as those given at Columbia University to school physicians could be turned to good advantage. But of chief impor-

tance in gaining a working knowledge and practice of school psychiatry is the actual work in a child guidance clinic or psychiatric dispensary, or assistant to a psychiatrist dealing with school age problems. Zone discussion and panel conferences with health officers and school physicians have been of practical help, but there is needed a greater readiness on the part of the physician to seek the services of the psychiatrist in sharing with him behavior and personality difficulties, especially at an early period before serious maladjustments such as delinquency and crime develop.

"Frequently health officers and school physicians are not aware of the local psychiatric facilities available, or they fail to utilize them to the full for various types of mentally and socially maladjusted children. The school principal and superintendent are often better aware of the need of child guidance clinic service than the physician. More education and experience in child development, child psychology, and child psychiatry in pre-graduation days would be of decided advantage to the physician whether he entered general practice or any of its specialties. Relatively few school physicians and public health officers read mental hygiene periodicals or books specializing in this branch of medicine. There is need of jarring many physicians out of the rut of *laissez-faire* methods of regarding and treating the maladjusted child."

5. "The school physician is so busy with looking for physical defects that he skips the mental hygiene opportunities of his work, unless the teacher calls his attention to the pupils' abnormal mental status. The doctor's recognition as to what is mentally abnormal is not very keen. He is schooled in the study of medicine chiefly as a study of disease, rather than prevention of illness and the maintenance of health. Thus the school physician by virtue of only general medical training is handicapped in doing a reasonably good mental hygiene job. On the other hand, most school physicians and health officers would be sympathetic toward mental hygiene if at any time in their career they had been 'sold' to it. As yet, it is beyond their experience. The older physician's psychiatric training consisted in the observation of mentally diseased patients committed to mental hospitals. He has had no instruction in preventive psychiatry or mental hygiene.

"The medical curriculum should be made over. Much of the time spent on histology, for example, should be given over to the study and practice of preventive medicine, particularly the early recognition of conditions and hazards that make for eventual mental breakdown; the prevention of goiter and other preventable and controllable disorders.

"The health officer and school physician could be made psychiatrically intelligent by devising methods which are simple, quick, and concrete for the assimilation of mental health concepts and technics. A 'ten point' formulation of this nature might arrest sufficient attention to spur on non-psychiatrically educated physicians to apply mental hygiene.

"At present, mental abnormalities are brought to the school physician's attention by the teacher, and occasionally the parent. He is willing to coöperate with the teacher, but he does not take the initiative and so this important relationship is often lost. The school physician should talk over each pupil with the teacher before he examines him.

"Mental health should be the first item on the school physician's examination blank. 'Nutrition' might well be displaced to 18th place because

you cannot adequately evaluate it until the pupil is stripped.

"If it were stated in the school physician's contract that the time he must give to the examination of each child per year should occupy a minimum of 30 minutes, the mental health aspects would find less chance of being lost sight of on account of the time factor. Of course, reasonable financial recompense for the physician's time is essential if the pupils' optimal welfare is to be realized."

6. "Some school physicians are so mind-set about their job that they think in terms of so many physical examinations and see how quickly they can get them over.

"Certain physicians have a natural knack of understanding and handling children. But relatively few physicians (general or school) give attention to the mental hygiene aspects of their work. They do not seem to feel need for it, especially those who need it the most. Those who do use it, welcome it. The dentist has made more progress in mental hygiene than the physician. Probably this is because he deals so much with pain and has to be quite expert in psychological medicine to hold his patients. The bedridden patient on the other hand, cannot escape from the physician. Perhaps also the cosmetic attention to the personality in contrast to health status gives the dentist a psychological advantage over the physician who fails to emphasize the health-beauty aspects of his services."

7. "Since over 50 per cent of medical practice is essentially involved in handling mental and emotional difficulties of patients, how can mental hygiene be regarded as a specialty? The general practitioner and school physician must be the main bulwark in treating extramural types of personality and behavior abnormalities. Besides, personal experience with certain psychiatric help has been disappointing and on occasion has led to an increase of troublesome situations."

8. "I acknowledge the immensity and seriousness of the problem of the mentally maladjusted but I do not feel more time and money are at present justified in supporting this branch of medicine until more prompt, effective, and reliable measures are forthcoming. There seems to be nothing in treating mentally maladjusted persons as specific as diphtheria antitoxin or typhoid vaccine. For the present, therefore, service to the mentally handicapped should be regarded as 'dessert' until the physical welfare of the individual is cared for to the fullest extent."

9. "Recently I was asked to give an address on mental health to a lay organization. As a health officer, the people of this district looked upon me as the source of all health knowledge. Although I laid no claim to being an expert in this branch of health, I gave the address. Somewhat to my chagrin I found out after the meeting that there were in the audience a psychiatrist and a psychiatric social worker. But I do not regret the experience.

"I feel that every health officer should obligate himself to gain a working knowledge of the essential facts of mental hygiene. His job is not only looking after the physical welfare of his community, but also its mental health. And this does not imply merely the commitment of persons so mentally ill as to require hospital treatment. It primarily devolves upon him to *prevent* such conditions as far as is within his power and opportunity. Mental hygiene clinics and observation wards in connection with general hospitals and health centers are essential to the early recognition and treatment of the community's mentally ill and maladjusted."

What shall we say about the foregoing opinions of experienced health officers and school physicians? Their

reactions seem to be a representative sampling of feelings and thoughts entertained on the present-day status of mental hygiene. The attitude of these health workers for the most part is decidedly encouraging. To a large extent they have pointed the way to solving most of the problems which interfere with the optimal integration of mental health from the point of view of the health officer and school physician. If the constructive suggestions formulated by these physicians were capitalized, what an impetus would be given to this important branch of medical service!

By way of summary and formulation of a "ten point" program of mental health basic attitude, knowledge and practice for health officers and school physicians, the following guide-posts are erected:

1. The attitude toward, and concept of, health must be amplified to include the optimal functioning of "the person," the individual as a whole. In the short historical march of preventive medicine, we have outgrown our concept of preventive medicine from that of primary concern with the prevention and reduction of human misery due to disease and death. We are no longer merely concerned with longevity *per se*, but the quality of human performance in terms of health, happiness, efficiency, and social adaptation. If we subscribe to this concept, we will stop thinking in terms of mind and body, realizing that they are inseparable and part and parcel of the same thing. We will strive to obtain the biological, psychological, and environmental needs each individual peculiarly requires to develop his constructive potentialities to the optimum.

2. The health officer and school physician should realize to a greater extent their unrivalled opportunity to build the foundations of the total health of the individual by virtue of their educational service to the unborn child, the parents, and their intimate contact with parent and teacher during the plastic period of infancy and childhood. If the foundation of health structure is faulty at its origin, the whole superstructure is jeopardized. The welfare of the child each year depends on the health of the child during the preceding years. Therefore, the best time for realizing our objectives in healthful living on all levels of integration—biological, psychological, temperamental, and social—is during the period of infancy and childhood. Are health officers and school physicians fully aware of their latent and potential possibilities in this regard?

3. Mental health may be regarded as the expression of the individual's adjustment to life in terms of *emotional* satisfaction in the light of his capacities, needs, demands, and opportunities. These depend upon the quality of the individual's original stuff or constitutional endowment, the environmental situations and life experiences affecting him, and how he adjusted and reacted to them from birth onward. Of prime importance are the quality of behavior, feeling-attitude, and compromise patterns woven into the warp and woof of his growing personality. These are the first line of defense of his ability to meet life demands and vicissitudes. Health is essentially a way of living, a dynamic-genetic functioning of the total person seeking satisfactions of his primordial instinctive-emotional component of his being, the mainspring of activity. Behavior is merely a symptom to be interpreted in the light of the individual's reaching out after satisfactions and needs. Behavior is just as much an integral expression of health as is health expressed in behavior. Since the individual reacts always as a total unit, the physical component of the personality should be functioning at its optimum in order

that he may capitalize his day-by-day adjustment demands and opportunities. The soil or hereditary aspect of mental health is important to recognize from the standpoint of positive eugenics and the fostering of the health of coming generations. But apart from the evaluation of individual constitutional endowment in terms of ability to stand emotional stress and strain and the correlative obligation for protection of the child from undue environmental pressure, the chief concern of the physician is in shaping the environmental stimuli so that reasonable success and satisfaction in living with others will be the lot of every person.

4. The school physician should pay special attention to every child who is experiencing failure in school, who is a misfit in the group, educationally or socially, who is unhappy and protesting thereto with "nerves." It must be recognized that fundamentally no child wants to fail. Failure means only one thing—that someone has blundered; someone has failed to show him off to advantage on his own level of ability to succeed. Every child wants to succeed, win social recognition and approval, and experience a wholesome sense of prestige and power—and he will, if we obligate ourselves to understand thoroughly the child's nature and needs and see to it that these are reasonably satisfied.

5. Just as the physician needs to know certain facts in evaluating the physical health of an individual, for example, temperature, pulse rate, blood pressure, blood and urine analysis, and other data, so in the evaluation of mental health we must seek facts of the individual's intellectual capacity, special abilities and disabilities, interests, aptitudes, and talents, as well as his mental conflicts, anxieties, frustrations, ambitions and their discrepancies with reasons for failure of actualization. The physician must familiarize himself with the meaning and estimation of intelligence tests. A large number of pupils complaining of "nerves" and failure in school are so because of the emotional strain resulting from lack of intellectual ability to succeed in the work expected of them. Conference with the teacher in every case of behavior and personality maladjustments is essential for interpretation and reconstruction of the problem. The facts of internal mental disharmony require time and the capacity to attain the pupil's rapport before he will unfold his thwartings, strengths, and weaknesses, anxieties, fears and ruminations. The environmental facts of home emotional atmospheric pressure due to stress and strain must be sought through visiting teacher or social worker, school nurse, or other sources. The enucleation or modification of emotional conflicts absorbed in this area of the child's life may be the means of restoring mental equilibrium. Usually a multiplicity of causes or variables are operating in unbalancing the blending of assets and liabilities. Likewise, it is important to keep in mind the desideratum of a multiplicity of results.

6. Work through pupil strengths and satisfactions to overcome undesirable attitudes and practices. Wholesome substituting, balancing and protecting interests and activities are frequently sufficient to crowd out morbid preoccupations and undesirable habits. Let us keep in mind that just as necessary as food, shelter, and clothing are for each child's physical welfare, so for his mental and emotional health are necessary varying degrees of affection, feeling of security, and belonging to the group, freedom to unfold and organize his creative capacities, and the opportunity to experience reasonable satisfaction of wish strivings and biological urges in everyday living.

7. Learn the normal latitude or range of psychological developmental facts

of behavior. We all more or less present *normal problems* of social adaptation and personality unfolding at various periods of the life span. These may be primarily related to endocrine or situational changes as well as to new integrations ever evolving in mental life organization with consequent shifts of methods in gaining satisfactions.

8. Seek to appreciate better the individual differences in original equipment, reaction patterns to life experiences, arrests in intellectual and emotional development and the causes hereof. The child's creative abilities, probable educational and vocational goal as well as avocational interests deserve particular attention. Create the optimal conditions for success in unfolding and capitalizing constructive individual differences. Cultivate constructive deviations from the norm in creative interests and abilities since it is only through these that human progress is made. One hundred per cent regimentation of human material spells psychic arteriosclerosis and retrogression.

9. Recognize that the home is the most important mental health educational institution of society. Bend every effort to see that every child has this part of his birthright guaranteed. If the start of life's journey is well prepared, we have little fear of maladjustments later on, although it must be kept in mind that human machinery may go awry at any point along the life span, but perhaps 10 to 50 per cent of mental maladjustments are entirely preventable and therefore a prime obligation of the public health officer and school physician. This aspect of health is essentially as important as the individual's and community's physical welfare. As in the treatment of the tuberculous, there is no cut-and-dried specific method of treating the mentally maladjusted. Similarly their reconstruction through reëducation in the art of living may take a period of months or years. But who would say that because we have no quick-cure specific for the treatment of the tuberculous that we will not concern ourselves with their welfare until sure and quick readily applied remedial measures arise? Likewise the tackling of the problems of persons handicapped by venereal diseases and the challenging problem of cancer merit concerted and intensive preventive therapeutic services, largely through public health education. The problems of the mentally afflicted are in no wise less real or less pressing for solution, but rather more so in view of their far greater incidence. Rational educational enlightenment, oftentimes over a long-term period, is necessary to uproot taboos and defenses handed down from one generation to another from the dark ages, and other sources of ignorance.

10. Although we can never dispense with common sense, who would think of practising surgery or any medical specialty without having his "horse sense" critically trained before presuming to be competent or venturing far in these respective branches? Postgraduate education, clinical experience, reading, and the putting to a test of diagnostic, preventive, and therapeutic aspects of psychological medicine, are essential for adequate service until our medical colleges can be won over to give more time to this part of the physician's education. Even then, there will always be plenty of room for the expert or specialist.

The success of the mental health of the individual and the community depends upon the *combined* efforts of the medical profession, professional educators, the clergy, parents, and every constructive socializing agency of the community. The multiplicity of forces shaping human behavior touch the total child every moment of his 24 hour living. It is therefore obvious that only by *sharing* our common obliga-

tion and opportunity according to our several special qualifications, trainings, and experiences, can we hope to do justice to the total health of those for whom we make ourselves responsible. The spearhead of any health program should be made up of those who are best qualified by education and experience to direct and evaluate it. If the medical profession fail in this, our nation's first obligation to the child, to whom can we look for guidance? The sampling of expressions brought to your consideration in this paper clearly indicate the recognition of need and interest of the health officer and school physician in matters of mental health. We dare not, and will not fail in this most challenging and promising opportunity.

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May Day—Child Health Day

AT the request of the State and Provincial Health Authorities of North America, the Children's Bureau of the Department of Labor has undertaken the responsibility for May Day–Child Health Day.

According to an announcement made April 8 by Katharine F. Lenroot of the Children's Bureau, the program for 1936 is to be centered on social security for children with special emphasis placed on health protection.

The assumption by an official agency like the Children's Bureau of this function previously carried by the American Child Health Association in coöperation with the State and Provincial Health Authorities marks a significant milepost in the development of May Day–Child Health Day as a point of departure for health department services.

A Community Program for Prevention of Mental Disease*

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THERE is a steady increase in mental disorders, for some of which causative factors are recognized, but no community has inaugurated a specific and continuous plan for their prevention. They, like all diseases, will be decreased not by therapy for the individual, but by mass prevention.

Medicine has contributed to civilization's progress largely through preventive measures learned from treatment; therefore, the prevention of disease is a major function of modern health agencies. Lay organizations, supported by private funds, and public health departments, maintained by taxes, no longer confine their activities to therapy. Many physicians work as hard to keep people well as they do to cure the sick. The medical profession and boards of health do not yet recognize that the prevention of mental and emotional disorders—or mental hygiene—falls within their province. No community has an organized program for the prevention of mental disease.

In the *Journal of the A.M.A.*, March 30, 1935, Dr. Ray Lyman Wilbur discussed the weaknesses of our medical curriculum, and mentioned specifically the departments of psychiatry, public health, and obstetrics as those in which improvement is definitely needed. If the teaching of these subjects has lagged, we know least about them and may be unable to appraise their possibilities. Nevertheless, we are offering for consideration a possible relationship between two of them, psychiatry and public health, and inclusion of one in the other, by a community program for the prevention of mental diseases, with special emphasis on those of psychogenic origin, the causes of which we are more able to influence than those of organic origin.

Except in the mental changes resulting from syphilis, alcoholism, and drug addiction, all of which have a distinct psychological component, we know very little about the control of organic psychosis. The prevention of arteriosclerotic, certain toxic, neoplastic, and senile disorders is not yet solved. But of psychogenic conditions we are not so ignorant.

Perhaps due to faulty psychiatric education, some of our public health leaders hold that the etiological factors of these disorders are unknown, and that with no specific cause and with only empirical treatment, prevention is impossible.

Others more familiar with psychiatric findings, and who recognize a causal relation between emotional reactions and mental disease, claim that because of the magnitude of the task they

* Read at a Special Session on Mental Hygiene of the American Public Health Association at the Sixty-fourth Annual Meeting in Milwaukee, Wis., October 7, 1935.

neither know where nor how to begin, and leave the solution of a fascinating problem to time, resting it in the lap of the gods.

Those physicians who are interested enough to ask advice usually say that psychiatrists and mental hygienists offer only theory, and no tangible or practical plan for decreasing emotional disorders. In contrast, they present the definiteness in the mass prevention of diphtheria, typhoid, smallpox, and other communicable diseases.

Even though psychogenic illnesses are not controlled by an instrument such as the hypodermic needle, they are, in many respects similar to those preventable diseases on which our public and community health agencies are most centered. These disorders attack the organism at an age when it has the least resistance to external influences and offers a most fertile field for the invasion of pathological elements—during childhood. They are contact diseases, being communicated from adults to whom these weaker personalities are emotionally bound and upon whom they are utterly dependent. Unlike typhoid, but like tuberculosis, mental maladjustment is a family disease in that some adult has communicated it to the child by prolonged and repeated exposure.

The communicability of adult reactions, healthy or unhealthy, is brought about through the child's mental mechanisms, which largely determine his acquired psychic patterns, his emotional responses to stimuli, and his capacity to deal with reality.

Identification with his elders and introjection, or the inclusion of environmental factors, such as parental beliefs, prejudices, fears, ideals, and customs, are as natural processes in childhood as growth in height and weight. Children may not imitate adults in the mental content or idea, but they react to it by emotional responses. Ideational material is largely determined by the feeling tone, and by the emotions experienced during the learning process. Inherent energy is apparently transmitted through the germ cells, but the direction of its course is laid out by the intensity of the enviromental impacts. Inhibition of this instinctual force sets up a child's abnormal reactions to his parents, authority, and reality.

Unfortunately, the physiological explanation of inhibition and frustration is unknown. If we could discover the exact chemical process and precise neural reaction when normal excitations of nerves are shunted off in other directions by unnatural checkings, or if we could measure with an "emotionogram" the effect of unhealthy stimulation on the child's central and autonomic nervous systems, then mental hygiene would be willingly taken over by the medical profession and more readily incorporated in a community health plan. Lacking laboratory evidence, we have to rely on clinical findings. Up to now such experimentation has been done only on chimpanzees and other lower animals. Psychiatry has a wealth of clinical evidence that psychic patterns are laid down in childhood, and are the reactions between an organism and the objects of emotional value. This evidence has come during the past 25 years from the analysis of patients who show the mental scars of misdirected instinctual energy during childhood.

The psychoanalytic and mental hygiene findings came at about the same time and corroborate each other. The child guidance clinics have furnished ample evidence of what adults can do to a child's emotions, for when their attitude toward the child and reality changes, the child's metamorphosis occurs. Likewise, when a neurotic, or problem child, is removed from unhealthy parents and placed in a healthy

environment over a long period, alteration in personality and emotional reactions is shown. The cessation of enuresis, night terrors, tics, habit spasms, anorexia, speech disturbance, fatigue syndrome, and many other symptoms by a change in environmental stimuli, give a clue to the causation. Any preventive measures will have to be instituted with these facts in mind.

The following ideas are offered to indicate *how* a community health program can include the prevention of maladjustment and psychogenic disorders.

In the average city of 200,000 the estimated number of children will be about 110,000. The level of intelligence will not be uniform. Of these, 11,000 will be unable to complete the 6th grade in school, and 2,000 of these will be suitable for custodial care in the schools for mental defectives. Another 11,000 will be unable to go farther than the 8th grade, but can take trade training and be good mechanics. Some 66,000 will have the capacity to complete a high school course, such as college preparatory, general or commercial, and the remaining 22,000 will have the cerebral equipment to graduate from some college. The same ratio is applicable to the adult population. These figures are approximate, but they are not rough estimates. In short, 20 per cent will be of professional caliber, 60 per cent will have the ability of the tradesman, skilled artisan, and "white collar" group, and another 20 per cent will include the unskilled laborer, the farm hand, the uncomplicated-machine operator, and those who will never be able to assume financial responsibility for their children, perhaps not even for themselves.

Assuming that the city has adequate health facilities with clinics, hospitals, and a competent board of health, we advise that the mental hygiene department be an adjunct or subdivision of the health department or of a health center. Since psychiatry is a branch of medicine and only that, it is advisable to unite a psychiatric set-up with the other departments of medicine. This affiliation makes its status, function, and purpose clearer to a community. A full-time psychiatrist, social worker, and stenographer will be needed, with a yearly budget of around $15,000.

An important consideration in any community endeavor is the personalities of those serving. Adjustment to life is advantageous in all work, but in other branches of medicine ability can compensate for a multitude of personality defects. The scientist confined to his laboratory is not called upon to mix with his fellow men as much as the doctor in community activity; and the surgeon who operates skillfully can break most of the 10 commandments, yet his ability will always be valued. This is not so with the public official or with the psychiatrist in a community project. As a rule, society expects psychiatrists, like ministers, to be righteous. To measure behavior only as good or bad, rather than as healthy or unhealthy, or to view human conduct wholly from the moral aspect is a remnant of non-scientific medicine. No matter how able a psychiatrist may be, his professional scope is limited if his adjustment to social customs is not as the community would have it.

The emotional reaction of patient and doctor, the psychoanalytic transference, is one of the most valuable instruments in a physician's armamentarium, and shows up positively or negatively in every doctor-patient relation. The same emotional situation occurs in a community's attitude to those from whom it seeks help. A well adjusted staff, with minimal defense mechanisms and adequate social adaptation, integrated with the group

life, has an invaluable asset in making mental hygiene understood. Its work will then be more than "something that some doctor has started."

Approximately 3 months are needed to learn from state hospitals the number, type, and name of cases which have come from the locality during the past 5 years, and to get from the physicians as much information as they can give about the extramural cases of personality disorders—whether acute emotional episodes or chronic paranoid trends. While the psychiatrist is meeting the doctors, the social worker can seek facts from the courts and the schools about the social offenders and problem children, together with the types of offense. During this time the psychologist can correlate this information and note prevalence in families.

This preliminary survey gives the psychiatrist more than a casual acquaintance with the community and its problems, and, no less important, the community meets the staff. When any locality knows the personnel and reason for a health set-up, it is more in accord with its purpose. By understanding the nature of a mental hygiene project doctors, public officials, business men, teachers, clergy, and the general population are less on the defensive and accept it more objectively.

Offers to explain mental illness and the function of psychiatry can be made to various organizations, such as medical societies, educational groups, social agencies, church boards, men's and women's clubs, police departments, and chambers of commerce. This will be the psychiatrist's principal work during the first months. As education of society is necessary for all disease prevention, the psychiatrist will be the instructor in mental health, teaching it in the language that his audiences can understand.

A key position in a community is held by the visiting nurses and social workers. By virtue of their positions and the nature of their work, they have a close and constant contact with the family life of those who are not guided by their doctor, or who are under the supervision of social agencies, because of economic limitation or faulty social adjustment. The varying potentialities of these people can be made clearer to the workers through bimonthly group discussions and individual conferences with the psychiatrist. Thus the family constellation of those who exhibit signs of emotional abnormality and behavior difficulties is made visible. The psychiatrist can examine the parents and suggest therapy—whether it be more suitable work for the father, birth control for the mother, adequate food for the family, adjustment to a mother-in-law situation, or an acceptance of self in one's reality. It may be necessary to test the parents' mental capacity to care for their children, and permanent supervision by a family agency or public department may be needed. At least, a diagnosis and prognosis of the human material can be rendered, as is not done now with our socially dependent class.

In every preventive health activity there are always people who, because of ignorance and its companion, fear, resist any help suggested. Psychotherapy for these unfortunates is impossible until their fear is lessened by more knowledge. The region of the unknown seems dangerous to them and an instinctive self-protection is to avoid danger. The resistance to vaccination, immunization, and other health measures has been overcome only by people becoming familiar with the methods employed, through education inaugurated by health agencies and based upon proven medical facts.

Any preventive work is first adopted by the educated and higher social order of a community. In this group are

the doctors. Society naturally looks to the medical profession for help and information on health. Therefore, a requisite for the prevention of mental illness is that the local physicians know the possibilities and limitations of psychiatry, both in therapy and prevention. This is best accomplished by employing it on cases. A share of the psychiatrist's time—paid for out of community funds—can profitably be allotted to consultation work with other physicians. A psychiatrist, by presenting an occasional and instructive paper at the medical meetings, working jointly with family doctors and other specialists, and being interested and coöperative in all health problems, can help to bridge the gap between physiological and psychological reactions. In this way the body-mindedness of our medical thinking will be outgrown, and the physicians can understand the psychiatry that the medical schools failed to teach them. With this knowledge their contribution toward the prevention of maladjustment is unlimited. The patient will not only benefit by therapy, but, equally important, the physician will be better equipped to recognize and control the causative factors in children.

In the prevention of children's diseases much of the doctor's work is accomplished indirectly through the parents, while in our schools the child is met directly. Our educational system is primarily for the pupils enrolled, but often parents learn ventilation and health rules from what the child has grasped in school. Sometimes he, particularly the adolescent, is put in a conflicting position by his parents not agreeing with the teachers.

For this reason the child must feel secure with his instructors and gain some satisfaction from his school accomplishments. Many an emotional conflict produced in the home by rejection, domination, or over-protection, has been lessened by a feeling of safety with his teacher, of belonging to a social group, and of being trusted by the educators with whom he identifies himself. Education, or the development of potentialities, is not accomplished by inhibiting the child's capacities or by expecting him to achieve more than he can. Fitting a child for life is brought about by taking direct account of the organism's ability, and not of the parental hopes and wishes, or the moralist's will power.

To this end the psychiatrist can meet informally with the faculties and give them a better understanding of the biological make-up of the total individual, mentioning facts to illustrate that laziness, restlessness, and lack of concentration are not answered by heredity, perversion, or the devil. The conferences can be stimulating and helpful, especially if they are not obligatory.

Following a clearer grasp of maladjustment, vocational planning can be introduced in one school and gradually extended to others. Vocational adjustment takes into account the scientific fact that all men are not created equal in capacities or in opportunities to develop their inherent potentialities. It is a means of having fewer educational misfits, decreasing the rapid turnover in factory, shop, and office, and lessening dissatisfaction in our social structure, with its new political platforms and unrealizable promises every 4 years. Increased knowledge alone shows us the futility and waste of trying to fit a square peg into a round hole. To direct the boys and girls leaving school so that their occupations will be consistent with their intelligence, emotional make-up, physical capacity, and social status, will contribute to the reduction of mental and social conflicts, and it can be done.

The final word of psychological testing has not been said, but the tests

have proved to be as positive measurements of that unknown quality called intelligence as the clinical thermometer is in indicating the severity of disease. The psychologist can sort, in the 8th grade, the simple factory type from those whose ability permits of further schooling. The children with superior ratings on group tests can be advised to enter high school, and the parents who object because of financial or other reasons can be referred to the family physician, the psychiatrist, or a social agency for an explanation of the findings. The choice of further education can be left to the child, with whom it belongs, without family interference—which does not often happen.

Those with low ratings on the group tests can be given manual dexterity and other individual tests to explain the lower score. As the years pass, the test intelligence of the adolescent and young adult group will be on record for future work reference. This and other psychiatric findings can be added to any information necessary for working papers. The clinic or the board of health can act as an employment center where employers can apply and learn of the prospective employees' fitness.

This will be a beginning of psychiatry in industry. A plan of this kind will decrease the frequency of youth attempting wholly unsuitable work with its consequent emotional reaction, and will help them to find gratification in work they can do, which, in turn, is one of the simplest and surest ways of handling the embryonic gangster.

The majority of our adolescent population will be in the various types of high schools, where health education, both for the students and the young parents, can be centered. The psychiatrist can join with other physicians in giving simple talks to parents and pupils, and mental hygiene can readily be incorporated in general health education. The potential parent of the next generation will profit from health instruction, the meaning of parenthood will be better understood, and the ignorance about human behavior and so-called insanity will be decreased.

When requests are made for literature or books, the staff can have available the information suitable to the person's intellectual and educational level, and if the demand warrants it, pamphlets explaining mental health and illness in simple language can be had. Gradually, information on faulty mechanisms, anti-social conduct, purposeless behavior and destructive inhibitions will be as general as is now the understanding of the advantage of milk in one's diet.

In 1930 the Bellevue-Yorkville Health Demonstration instituted an educational program for the nurses associated with the center. The psychiatrist gave only 2 mornings a week to the work, but that time was spent mostly in discussions with the entire group and in individual conferences on the work with the cases. Anyone outside of the staff was welcome to these group meetings, and there was usually some visitor, perhaps a doctor, a social worker, a priest, or a graduate student in some college. After 2 years of work we reported the results at the meeting of this organization in Washington. The program was continued until January, 1934, at which time the city health department assumed the entire financial obligation of the center, and the Mental Hygiene Department, which had been supported from private funds, was discontinued. Gathered from the opinions of the nurses, the teachers, and the families met, together with the results in the other clinics, it can be said that the plan was concrete, workable, and contributory to the lessening of psychogenic and social difficulties.

The lack of community programs for the prevention of mental disorders is not wholly due to the reasons offered by our public health leaders, such as the nonspecific causation and intangible methods, but rather to the same reason that prevents mass prevention programs for venereal diseases, which are of specific etiology and for which the preventive measures are definite and known. Program after program can be laid down, but none will be accepted, no matter how concrete, so long as our leaders think subjectively about the wickedness of sexual instincts and cling to the moralistic idea about the sinfulness of antisocial behavior. Only by education was the somewhat disgraceful term, "pulmonary tuberculosis," substituted for the less innocuous "lung fever." Society accepts some medical facts gingerly but it eventually follows the leadership of the profession. Progress is made after health agencies, public and private, appraise any disease objectively and scientifically. It is brought about by constant mass education, which, like all development, is gradual and questioned. Resistances are always encountered when science uproots our primitive beliefs and lays bare our emotional defenses.

Psychiatry offers no panacea for life's frustrations but looks for the explanation of human behavior as diligently as other specialties search for the meaning of man's less total functions.

The prevention of abnormal behavior is an educational and scientific procedure. It is not peace propaganda, it is not a political campaign, it is not related to capital or labor, it has no reference to any church, it is not a social entertainment.

This procedure coördinates medical knowledge and keeps in mind the totality of the individual. It deals with the imbalance of physiological processes brought about by tissue destruction or emotional conflict. It takes into account the instinctual energy misused and uncontrolled because of grandular disturbance, dietary deficiency, or cellular change; it also works with histologically normal organs functioning pathologically as a result of emotional response to parental reactions and environmental influences. It aims toward a sound mind in a sound body.

DISCUSSION

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THIS paper makes the following specific allegations:

1. There is a steady increase of mental disorders, a class of diseases which are almost as endemic as the common cold and about which the causations are as definite.

2. No community has inaugurated as yet a specific and continuous plan for their prevention.

3. The medical profession and boards of health do not yet accept that the prevention of mental and emotional disorders falls within their province.

4. We know very little about the control of organic psychosis but we do know about the control of psychogenic conditions.

5. Due to faulty training, some physicians and public health administrators hold that the etiological factors of psychogenic mental diseases are unknown—therefore not preventable.

6. Some physicians and public health leaders recognize a causal relation between emotional reactions and mental diseases but because of the magnitude of the task do not see any place to begin.

7. Most physicians and public health leaders claim that psychiatrists and mental hygienists offer only theory and no tangible or practical plan for decreasing emotional disorders.

These allegations can, we believe, be proved beyond a reasonable doubt. The last 3 relative to the physician and public health worker may be the fault of the psychiatrists themselves. Psychologists and psychiatrists have spent a major portion of their efforts on the promulgation of theories that mystify the profession as well as the public. They have surely shirked their duty in not pausing long enough to test, prove, and formulate some fundamentals upon which they could all agree. These fundamentals would then be given general scientific approval and serve as the foundation of their specialty and the education of the uninitiated.

The president of one of our large midwest universities recently made a study of his department of psychology. He found that his 6 professors of beginning psychology were each using a different text. The 6 texts were each written to establish the theories of 6 different schools. He called his staff together and asked them if there were not a set of fundamental principles upon which all psychologists could agree. The staff thought that there was. He told them to get together and bring to the next staff meeting a text which incorporated these elementary fundamentals upon which all could agree. Each professor brought the same text he had been using. The president took the position that he did not care what theories or what school of psychology they taught in their advanced classes but all must teach the same text in the elementary courses, and that text must contain the fundamental principles of psychology upon which all psychologists could agree. He asserted that the student had a right to such a text and such an initiation into the field of psychology, before he was asked to grope about and try to keep his sanity in the entanglements of psychological theories. After much discussion with the president, the majority decided upon such a text. Two, however, said they could not teach this text and were excused from teaching the beginning classes.

Physicians and public health leaders have a right to expect that the psychiatrists clarify their field and give some attention to recognized fundamentals upon which a scientific understanding and procedure can be built. Then and only then is it justifiable to make such allegations as the above against the medical profession and public health workers.

Therefore, Dr. Adamson performs a unique service. In so far as is possible in a short paper she states the fundamental points relative to prevention. These principles are simply stated and are agreed upon by all mental hygienists — namely, that psychogenic illness is mainly acquired in childhood; that it is a family disease in the same sense that tuberculosis is, in that some adult has communicated it to the child by prolonged and repeated exposure during a period of weak resistance; that with the understanding that psychic patterns are laid down in childhood, the prevention of psychogenic diseases becomes a problem of leadership and guidance on the part of psychiatrists in the schools and home.

This clarifies the problem, defines the scope of activity, and outlines the point of attack in so far as the responsibility of the public health administrator is concerned. It is at least as clear, and is better defined than our tuberculosis problem was when we began our program of prevention.

With the foregoing allegations and conclusions, the paper proceeds to outline a community health program in the prevention of maladjustments and psychogenic diseases. The plan has the following merits:

1. It is essentially a broad educational program.
2. Its activities correlate the medical profession, the schools, and the home.
3. It is directed by the psychiatrist.
4. It is supervised by the public health department.

This plan of organization clothes the movement with the educational and scientific safeguards essential to its success.

In any new movement, if the highly emotional types are given any opportunity, they do the cause more harm than the conservative element. These well meaning individuals become militant missionaries with a new cure for all human problems. They create illogical and non-scientific ideas and procedures as short cuts to the performance of their miracles. This element has already been a detriment to psychiatry. The phrase prevalent from Maine to California "Have you been psyched?" has in its implications disgusted not only the medical profession but most of the stable population. The plan of organization recommended safeguards the program from such pitfalls.

Any medical educational program not supervised by the medical profession and given the stability of the administration of the public health organization sooner or later runs amuck. It has a period of emotional, hysterical propaganda with wide publicity culminating *in quasi* and pseudoscientific principles and procedure. Sooner or later the public senses the facts, discovers the pseudoscientific principles and goes to the opposite extreme of negative reaction to the whole program. The mental hygiene and mental testing programs of our public schools are even now in such danger.

There is some public demand for the public benefit of psychiatry at public expense. It is interesting to note from news items the various avenues this demand takes. For instance, here is one from the *Akron Times Press,* August 29, 1935: "The Young Men's Democratic Club after hearing a talk by Probate Judge Dean F. May, yesterday adopted a resolution urging the county commissioners to appropriate $15,000 for a mental clinic at the County Home. The club met at the Y.M.C.A. A committee was named to confer with the commissioners."

We can assume then that the following allegations are true, and correct beyond a reasonable doubt.

1. The steady increase of mental disorders is a menace to the health and happiness of the American people.
2. Psychiatrists are agreed upon the essential fundamentals in the etiology and prevention of psychogenic mental disorders.
3. They have established well defined and scientific procedure in diagnosis and clinical treatment.
4. Psychiatry is a branch of medicine.
5. There is public demand for the humane, social, and civic benefits that psychiatry has to offer.

If this be true, then the medical profession cannot be true to its history and tradition if it shirks the leadership and scientific guidance of this phase of medicine, and its administration through the public health organization.

Consumer Demand for Vital Statistics*

The Health Officer's Point of View

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THE title of this paper might well have been put in the form of a question, namely, "What use does the health officer have for vital statistics?"

During the past 15 years, while health departments, particularly state health departments, have been expanding rapidly their field of activities, many people are apt to lose sight of the fact that the science of public health was founded and still rests firmly upon vital statistics. There is no branch of public health work the founding of which was not either wholly or at least in part the result of a study of vital statistics.

The so-called "Sanitary Awakening" occurred about the middle of the 19th century. The first medical officer of health in England was appointed in 1847 by the Town Council of Liverpool. In October, 1848, the Corporation of the City of London appointed as its Medical Officer of Health, John Simon, then a young lecturer in pathology at Kings College. John Simon was the prototype of our modern health officer, the first health officer in the modern sense.

Where did Simon get his information regarding the conditions prevailing at the moment and upon what information did he base his acts as medical health officer? From Simon's book on English Sanitary Institutions we find that the death returns of the city registrars were made on Monday mornings and on Monday afternoons they were placed at his disposal, as he says, "in a way which enabled me to complete my use of them during the evening, so that on Tuesday mornings when the weekly courts of the City Commission were held, I was ready with all needful particulars as to the deaths which had befallen the city population during the previous week, and with my scheme of such local inquiries as were to be made in consequence."

From the above quotation we see that the weekly bills of mortality formed the basis for the investigations which he instituted as to the causes and means of prevention of deaths among the inhabitants of London. For John Simon, vital statistics formed the corner-stone of his work.

The 88 years that have elapsed since Simon took office have seen the development of practically all those sciences, such as bacteriology, epidemiology, parasitology, pathology, immunology, sanitary engineering, etc., upon which is based the modern science of preventive medicine and public health. Sources and modes of obtaining information have been multiplied, and yet returns of deaths still form one of the most important sources of information to health officers. All the

* Read before the Vital Statistics Section of the American Public Health Association at the Sixty-fourth Annual Meeting in Milwaukee, Wis., October 10, 1935.

other intelligence services used in modern public health practice cannot replace the death returns. The standard form now in use in, I believe, all but one of our 48 states contains a mass of information impossible to duplicate by any and all other practical means and supplies the health officers with a great many facts from the practical viewpoint which are unobtainable from other sources.

For certain diseases such as diphtheria, typhoid, and a few others, morbidity reports are quite dependable and reach the health officers in advance of mortality data, but for many other diseases which are public health problems and which in certain parts of the country are more prevalent than diphtheria or typhoid, our only reliable source of information is through the returns of death. It is true that death returns do not give the health officer all the information he desires or needs, but when the medical profession does not report the prevalence of certain diseases with any degree of dependability, the health officer must rely to a great extent upon death returns. To cite only one disease, consider tuberculosis. Previous to 1930 in Rhode Island more deaths occurred from this disease than there were cases reported. I have not attempted to compare corresponding figures in other states. The same condition has in the past prevailed in the other states and if we took the time to inquire, we would probably find it still existing in at least some of our states. Under such conditions we can get but a very poor picture of the situation as regards tuberculosis from the public health standpoint from any source other than the death returns.

I do not wish to create the impression that I am in any way minimizing the importance of morbidity reporting. As a matter of fact, from the health officer's point of view I regard morbidity reports as an integral part of vital statistics. Our vital statistics will never reach that degree of completeness which every conscientious health officer desires until morbidity reports become as complete and accurate as mortality reports. Mortality reports give a two-dimensional picture. The addition of complete morbidity reports to our mortality statistics give the health officer a three-dimensional, stereoscopic picture. The perspective thus created helps to place many objects in the picture in a much more accurate relationship to each other and will help to remove much of the distortion which now affects the picture, particularly if the health office is affected with cerebral myopia.

The health officer is also interested in birth returns, for these statistics constitute the common denominator for the study of all the factors concerned in infant mortality. Our knowledge of infant mortality and our studies of all the factors contributing to infant deaths and the saving of infant lives are vitiated to just the extent to which our records of births are inaccurate.

It is the health officer's duty to determine the size of the public health problems confronting his state, city, or community. It is his duty to ascertain as accurately as possible the progress that is being made in the numerous activities carried on by all up-to-date health departments. He is looking for every reliable criterion for determination of conditions and evaluation of the degree of progress. If there are any faults in his various programs he wants to know where these faults are at the earliest possible moment in order that he may rechart his course and reset his sails for a more direct attack. Even though the advances in public health practice have added other measuring sticks, in all these problems the health officer always has been and always will be dependent to a large extent upon this study of mortality statistics. Mor-

tality statistics are one measuring device with which a health officer cannot dispense. The solution of many of our unsolved public health problems lies in the collection of better and more accurate vital statistics and in the greater study and more accurate interpretation of the vital statistics we already possess.

Mortality statistics was the foundation upon which John Simon founded the modern public health movement. During the 88 years since John Simon began his work vital statistics have lost little if any of their importance. Whatever superstructures have been erected in the past or may be erected in the future, such superstructures will always rest firmly upon a foundation of which vital statistics is an integral part.

Consumer Demand for Vital Statistics*

The Needs of the Epidemiologist

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DEMARCATION of the field of epidemiology is becoming more difficult due to a tendency to apply the term not only to infectious diseases, whether or not they occur in epidemics, but also to certain diseases considered to be non-infectious, such as diabetes and cancer. Also it has been applied, correctly, to experimental studies relating to virulence, means of transfer, or resistance. For the purpose of the present discussion, however, it will be understood to denote only the natural phenomena, or natural history, of pathological conditions known to be of infectious origin.

Whipple distinguishes between vital facts, which concern birth, marriage, divorce, sickness and death, and vital statistics, which is the application of the statistical method to the study of these facts. Commonly, however, the terms "vital statistics" and "vital facts" are used more or less synonymously. It will be assumed that the present discussion is concerned with the demand for vital facts, properly collected, collated, and tabulated.

In general, the work of the epidemiologist is twofold. He is the "watchman in the tower" equipped to investigate and take immediate action whenever undue prevalence becomes manifest. Between such events, the intervals comprising most of his time, he is engaged in the study of endemic disease, that is, in research of a fundamental nature such as the determining of sources of infection, methods of spread, or other characteristics; or his efforts may be directed more immediately toward better methods of prophylaxis, as in the study of the efficacy of some immunizing agent.

In his primary function, the epidemiologist depends on vital statistics, upon records of previous and current morbidity and mortality, to initiate his activity. Many small outbreaks are overlooked and large ones not recognized in their early stages, for lack of

* Read before the Vital Statistics Section of the American Public Health Association, at the Sixty-fourth Annual Meeting in Milwaukee, Wis., October 10, 1935.

such records, or failure to utilize them. Case fatality rates have some value in checking completeness of reporting, and should be computed, for the principal diseases, month by month, at least for counties and large cities. Sufficient statistics are now available in most large cities and in many counties to provide fairly satisfactory weekly norms for a few diseases. For this purpose median incidence should be computed, using, for example, the method of Bundesen and Hedrich.

It should be recognized that the degree of completeness of reporting which can be hoped for under the best system of registration will vary with the disease and with its severity. In smallpox, for example, the number of cases reported when a virulent form is present should not be far short of actual prevalence; during mild epidemics a certain proportion will be overlooked. The same general fact is true of diphtheria, scarlet fever, and other diseases; that is, the milder the type the larger the proportion of missed cases.

In research problems, vital statistics are the *sine qua non* of the epidemiologist. Population estimates by color, sex, and age, are in constant demand, and without these other statistics are of little value. On several occasions, it has been necessary for the writer to take a population census preliminary to epidemiological studies, due to the lack of reliable estimates in sufficient detail. This was true of a section of Baltimore some years ago in a study to determine the value of toxin-antitoxin. Also, a block census of Knoxville was made by Dr. Haygood and the writer in studies on typhoid fever. In the first of these instances the count would not have been necessary had it not been for the delay in publication of the federal census. In the second, the city had grown so rapidly as to render quite uncertain estimates based upon a census taken 6 or 7 years prior.

When working in foreign countries, particularly in the Orient, the need for population data is far more acute. In many large areas, no reliable census has ever been taken. Even in the Philippine Islands, there has been no census since 1918, and none prior to this since the American occupation, save the military census of 1905.

In generalizing upon the research of the field epidemiologist it should be noted that many of our most important facts and conceptions relating to infectious diseases still rest solely or chiefly upon evidence obtained in the field. Among these are:

1. The infectious nature and communicability of certain diseases, the etiological agents of which have not yet been discovered.

2. The immunity resulting from an attack of certain common diseases. Perhaps the classical example of this is the proof of immunity conferred by an attack of measles, established by Panum in his study in the Färoe Islands in 1846. Panum was able also to determine other important facts, including the usual period of incubation of this disease.

3. Definite and characteristic differences between diseases with respect to season, age distribution, geographical distribution, and periodicity.

4. The transmission of certain diseases by inanimate objects or by food. A classical example again may be cited, namely, the transmission of cholera by polluted drinking water. Although the name of John Snow is connected most intimately with the Broad Street Pump epidemic, his brilliant statistical analysis of data relating to the cholera deaths in London in 1854 furnished incontrovertible proof of the relationship of these deaths to drinking water. In the appendix to his classical work there is given a list of the names and addresses of fatal cases which he secured from the Registrar General; and also the name of the water company supplying the house. His account is the record of an experiment, set up unwittingly but almost ideally, by commercial water companies; and, as Snow expresses it, "The experiment, too, was on the grandest scale. No fewer than 300,000 people of both sexes, of every age and occupation, and of every rank and

station, from gentlefolks down to the very poor, were divided into two groups without their choice, and, in most cases, without their knowledge; one group being supplied with water containing the sewage of London, and, amongst it, whatever might have come from the cholera patients, the other group having water quite free from such impurity." This is one of the first and most notable contributions of vital statistics to epidemiology.

5. The relative importance of various modes of transmission as actual factors in disease prevalence.

6. The particular conditions responsible for local prevalence whether epidemic or endemic.

Without further expansion, it will be obvious that establishment of these and other facts would be impossible without statistics of population, morbidity and mortality; first, broad statistics which it is the duty of the vital statistician to improve and extend and, second, more detailed statistics which the epidemiologist must collect for himself.

No manipulation of vital statistics can solve the fundamental problem of the cause of epidemics. Mathematically, the usual type of epidemic curve can be reproduced on several essentially different hypotheses; assuming, for example, as did Brownlee, variation in the pathogen, or, as did Ross, variation in other factors. The solution must be sought in the experimental laboratory.

Similarly, no statistician can forecast from a study of previous morbidity and mortality, precisely when an epidemic is to be expected. In influenza, Brownlee was of opinion that there exists more or less regular periodicity, but he recognized fully the inadequacy of available data. In this connection, as in many other problems, it is necessary to think of the future. Only the foundations of vital statistics have yet been laid, even in the most advanced areas. The vital statistician is, therefore, still a pioneer. Upon the success of his efforts to intensify and expand his field, the future of many related sciences, and among them epidemiology, will, to a large extent, depend.

Consumer Demand for Vital Statistics*

The Need of the Child Hygienist

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RECENTLY, as I have had occasion to look over some early reports of annual meetings of the American Association for the Study and Prevention of Infant Mortality, and also the report of the first Conference on the Prevention of Infant Mortality held in 1909 under the auspices of the American Academy of Medicine, I have been impressed with the almost universal demand on the part of the pediatricians, obstetricians, social workers, statisticians, and others who took part in the meetings for more exact and more extensive data on infant mortality. Though previous to the beginning of the 20th century there had been a general awareness of the great number of infant deaths, it was not until the first decade of this century that the in-

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terest of professional workers in the United States was aroused and concerted action initiated to make available the statistical information which was necessary to stimulate community action for the prevention of infant mortality and the improvement of health conditions among infants and children.

Up to the time of this first conference in 1909, data on infant mortality had been limited to the reports of infant deaths collected in connection with the decennial censuses of 1880, 1890, and 1900, and to reports of infant deaths for a few states and a few large cities. In the law of 1902 authorizing the Bureau of the Census to collect mortality statistics annually, the annual collection of birth statistics was also authorized.

The need for registration of births and the importance of reliable infant mortality statistics based on live births were discussed in the Census reports in 1906; in 1907 the report pointed out that there was no state or city in the United States which had even fairly complete registration of births; in 1909 the need of reliable statistics for the provisional birth registration area and, indeed, for the whole of the United States was reiterated. It was not until 1915, however, when 10 states and the District of Columbia had sufficiently complete registration of births, that the birth registration area was permanently established. Since that time, data of increasing importance to the child hygienist have become available, and today, 20 years later, we have in our infant mortality rates an index for measuring accomplishments in the child health field that is invaluable.

Close upon the heels of this rapidly developing interest in the prevention of infant deaths came similar demands for prevention of maternal deaths, for more accurate and complete reporting of these deaths, and for a better understanding of their causes. Since the accuracy of maternal mortality rates also depends upon the completeness of birth registration, increased impetus was given to the campaign to establish the birth registration area. Furthermore, the close association of prenatal and natal conditions in the mother with the welfare of the new-born infant was obvious, and obstetricians and pediatricians alike were drawn into the activities of the growing child hygiene program.

That vital statistics must be an essential part of the stock in trade of all who are engaged in improving maternal and child health conditions, whether physicians, public health nurses, social workers, nutritionists, or others, needs scarcely to be pointed out. The child hygienist knows, for instance, that the trend of infant mortality rates in his community will be used as one of the measuring rods of the success of his program and that he must be alert to see that the data are as accurate as possible. He knows, too, that one of the most important uses of vital statistics is to interest his public in extending and broadening his program. To do this he must present the data in a form that is graphic and easily understood. Maps and diagrams are of the greatest value for this purpose and will often be more effective than words in educating the public. More material of this sort, giving information on local communities as well as individual states and the United States as a whole, is needed.

The most important use of vital statistics to be made by the child hygienist, however, is in connection with the formulation of his community program. Decisions with regard to the type of service most needed in certain districts or even for the whole area under his jurisdiction may depend to a great extent on the facts brought out by a study of statistical data.

Selection of areas for special investigations, for demonstrations, or for other types of intensive work will depend on the infant or maternal mortality rates or on the rates for communicable diseases or on other morbidity data.

At the present time, when state health departments are planning programs for strengthening their maternal and child health services with funds to be allotted under the Social Security Act, statistics on live- and stillbirths and on infant and maternal deaths are indispensable. The act itself requires that certain allotments of funds be made on the basis of live births, and in deciding how additional allotments will be made from the fund to be distributed on the basis of financial need of the state for assistance in carrying out its plan, not only will live births be taken into consideration but also the need, as shown by infant and maternal mortality rates, and by morbidity as well as mortality rates for diphtheria, tuberculosis, dysentery, and so forth. The use of live births as a basis for allotment of funds is a new procedure which was made possible by the inclusion in 1933 of the last of the 48 states in the birth registration area. Fair and equitable allotment of funds, however, requires that the reporting of data should be equally complete in all states. The birth registration campaigns recently conducted jointly in 24 states by the U. S. Bureau of the Census and the F.E.R.A. have stimulated interest in more complete reporting of births and deaths, and it is hoped that similar campaigns will be conducted in other states in the near future.

Adequate information on which to base the preparation of state programs for maternal and child health services must include not only mortality figures for each state as a whole and for its urban and rural areas by color, age at death, and cause of death, but also detailed statements with regard to the situation in individual communities. Such statements have been prepared from local statistical data in many places for local use. Information on infant mortality rates by counties for the period 1930 to 1932 for the whole of the United States with the exception of Texas is now available in map form, and similar data on maternal mortality by counties for the period 1931–1934 are being compiled by the Children's Bureau in coöperation with the Bureau of the Census. Plans are also under way in the Bureau of the Census for the reporting of mortality data by residence for the country as a whole.

The mortality statistics available are on the whole reasonably satisfactory for the purpose of planning programs or will be when the data on maternal mortality by counties and mortality by residence are available. There are, however, additional data that would be of value to the child hygienist if they could be obtained. There are at present no nation-wide or state-wide data on the relation of infant or maternal mortality to such socio-economic factors as unemployment, family income, and change in economic status, nor with regard to the relation of maternal health to the health of the infant. Had such data been available during the past 5 years, many of the questions in the minds of child hygienists, social workers, and others as to the effect of the economic depression on infant and child health and welfare would have been more easily and more satisfactorily answered. If such data could be made available on a nation-wide basis, added impetus would be given to the whole child health and welfare movement, and the child hygienist would be in a still better position for the organization of activities.

An aspect of vital statistics long neglected and yet of great importance to the child hygienist is the record of

stillbirths. The causes of stillbirth as entered on the certificates are so unsatisfactory and the terms used so poorly defined that it is impossible to learn much about the fundamental conditions that led to the death of the fetus. To study adequately the causes of stillbirths with a view to ultimate reduction in their number, the child hygienist needs not only accurate and comparable information with regard to the items on the present certificate, but more information in regard to conditions in the mother that preceded the death of the fetus. The revised stillbirth certificate suggested by the American Public Health Association's Sub-committee on Accuracy of Certified Causes of Death would provide much of the needed information, and should stimulate interest in the search for causes. Furthermore, completeness of stillbirth registration and uniformity of state laws with regard to minimum period of utero-gestation for which registration of stillbirths is required are of fundamental importance for the reduction of fetal and maternal mortality. Information regarding all stillbirths from the 5th month of gestation onward should be recorded.

An excellent opportunity for improvement in the completeness of stillbirth registration exists in connection with birth registration campaigns. This opportunity should be taken advantage of in the campaigns conducted in the future.

Further information is also needed regarding the prenatal and natal circumstances that precede the death of live born infants, especially those taking place on the first day of life or within the first week. Though prematurity is given as the cause of death in more than half of all neonatal deaths, it is impossible to determine from the birth or death certificates the underlying condition in the mother that led to the premature delivery and was the real cause of the death of the infant. Space should be provided on both birth and death certificates for the entry of information regarding prenatal and natal conditions so that data may be available for infants who survive as well as for those who die.

Revision of the titles under which causes of deaths that occur in the first year of life are classified in the *International List* is greatly needed, especially of the titles that are used frequently for causes of death in the neonatal period. Titles such as congenital debility, which do not describe a medical entity, should be deleted and more titles that are medical entities be substituted for indefinite terms. I appreciate that the difficulty or impossibility of making a diagnosis often accounts for the entry of indefinite terms on death certificates. Complete entry of conditions found in the child would, however, often provide the information not now available for classification of cause of death under titles which would be actual medical entities.

With respect to reporting of maternal deaths, space should be provided on the death certificate for more detail as to cause of death and definite inquiries should be included regarding the prenatal and natal conditions regarding all deaths associated with pregnancy and childbirth. Statistical information is greatly needed with respect to all deaths associated with pregnancy and childbirth and not just those that are assigned to the puerperal state.

To the child hygienist vital statistics are perhaps more important in planning and developing his community program than any other group of facts at his disposal. More use should be made of them, especially in graphic forms, and more data should be gathered and made available to child hygienists and others which will throw further light on the major problems in the field of maternal and child health.

Consumer Demand for Vital Statistics*

The Health Education View

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AT the outset I can testify from many years of experience that there is a considerable demand for vital statistics and it is a demand we should endeavor to meet. But just as any wise manufacturer seeks always to adapt his product to the consumer by studying his market, so should we study the consumer demand and adapt our vital statistics accordingly.

It seems not sufficiently realized that our consumer demand comes from three distinct groups and that each of these requires vital statistics of a special kind. Failure to take this fact into account is largely responsible for the mediocre, uninteresting, and worthless bulletins published by many health departments throughout the country.

First of all, then, let us have clearly in mind the three broad groups of consumers for whom we should prepare vital statistics. They are—practising physicians, students of public health, and the laity.

PRACTISING PHYSICIANS

Let us take them up in order. I have listed the practising physicians first because I regard this group as the one to which health departments should devote their first attention. I have repeatedly expressed the opinion that if a health department can publish only one bulletin, it should be a bulletin addressed primarily to physicians and students of public health. In such a bulletin, vital statistics lend themselves admirably to the presentation of current health problems. They can be utilized to call the attention of physicians to the prevalence of disease, to interesting correlations with which the physicians should be acquainted, and to problems which deserve investigation. I have found them very useful as a point of departure for an informative article on some important phase of public health.

Vital statistics for the purposes just mentioned should be simple, and, as far as possible, illustrated by simple graphs. They should be free from such mathematical refinements as "probable error," "standard deviation," or "correlation coefficient." The tables should be stripped of unnecessary details, and each article should be limited to the presentation of one or two simple facts readily grasped by the reader.

Practising physicians welcome this type of information and are influenced by it. They accept the data and conclusions on the authority of the department of health or other health agency sponsoring the publication.

STUDENTS OF PUBLIC HEALTH

We now come to quite a different consumer group from that just discussed. Students of public health—

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and under this I include, of course, health administrators—want detailed basic facts. They do not shy at long, dry-looking tables, for they have learned how to extract the nuggets often present in a lot of mere figures. These consumers must have all the available data, must be informed of all the exceptions or inclusions in the tables, all the qualifications.

In a health department bulletin or annual report it is advisable to publish only the detailed basic tables, leaving the publication of scientific analytic studies to special articles in scientific journals.

While the number of those who demand detailed statistical tables is relatively small, they constitute an important and influential part of our consumer group. They should not be overlooked.

THE LAITY

So far as the laity is concerned, its demand for vital statistics comes to us chiefly from the newspapers. Judging by what the city editors ask for when they send their reporters for information, there must be a considerable interest on the part of newspaper readers in vital statistics. Inasmuch as my experience is with the large metropolitan dailies, in which space is very valuable, and inasmuch as the city editors of these newspapers have a keen instinct for what the readers want, this attitude on the part of the editors is significant.

Now just what kind of statistics do the newspapers prefer? Well, for one thing, they all want weekly, a statement of the number of births and deaths. It is advantageous to furnish with this, comparative figures for the preceding week, and cumulative totals for the year and for the corresponding period of the previous year. Besides this, in New York City we furnish figures for a few important causes of death and figures on infant mortality.

From time to time depending on local conditions, some special topic can be treated statistically—the course of a disease over a period of years, the course of deaths from automobile accidents, from suicide, from typhoid fever and the like. Birth statistics always appear to be specially welcome—total births, number of twins and triplets, births by nationality of mother, by age of mother, largest number of births to a mother, youngest mother, etc.

Statistics supplied to newspapers should be extremely simple. The tables should usually be narrow, to fit readily into a single column. On the relatively rare occasions when it is possible to secure extended space for a special feature article, a neat graph can often be used advantageously.

Many of the routine press releases dealing with the health department activities can include statistical data. In this connection, it is well to remember that numbers are more readily understood than rates. If the point can be made by using actual numbers in place of rates, the numbers should be preferred. If rates must be used one should be careful as to the mode of expression. Health officials are so accustomed to the use of rates that they easily forget to write out in full, "per 100,000 of population," or "per 1,000 babies born."

Newspaper statistics should always be timely and as up-to-date as possible. If a particular analysis relates to statistics a year or so old, they may often find prompt acceptance if the introductory statement says: "According to a survey just completed by ....." Naturally, in every case, the material must stand on its own merits; it must have public interest.

In order to secure full use of vital statistics by the newspapers it is important to learn just what constitutes news. There is no better way to do

this than by establishing a friendly contact with some of the local editors, or, in a large city, with some experienced reporters. Discuss matters with them and endeavor to supply sound statistical material along the lines they suggest. However, keep your feet on the ground and do not yield to mere sensationalism.

Is there a consumer demand for vital statistics?

Most emphatically yes!

Consumer Demand for Vital Statistics*

The Field of Demography

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THE interest of the demographer in vital statistics is somewhat less specialized than that of the person engaged in public health work and much less specialized than that of persons engaged in particular fields of public health. The demographer is interested in all the movements of population and in all the factors which are likely to affect these movements, hence, he is anxious to see the best possible all-round collection and tabulation of births, deaths, and marriages. These form a considerable part of the grist for his mill, and naturally he wants the basic materials to be satisfactory. Complete and accurate registration of all *vital* facts is therefore a basic need of the demographer. He must perforce work with less but in so doing his results are vitiated to a certain degree.

One use to which the demographer can put vital statistics is in the forecasting of population growth and changes. In a world in which any planning for the future is done by the community it is essential that population trends be kept track of and that fairly reasonable estimates of growth (or decline) be made. The usefulness of such estimates naturally depends in large measure upon their accuracy, and it goes without saying that this must vary more or less directly with the accuracy of registration of vital facts. I say this because I believe it is now fairly well recognized that there is no *law* of population development by which population growth can be predicted, regardless of the actual vital trends. Again, without accurate death registration we cannot calculate accurate death rates by age, and without these we cannot construct life tables. Also without these age specific rates we cannot calculate the age composition of the future population within limits which will render such calculations of greatest value in planning for old age pensions, for school plants, or for many other enterprises which the community may desire to undertake.

Complete birth registration is just as important as death registration to the demographer. Without this we cannot know the balance of births and deaths and the general trend of population growth. Also without tabulation of births in connection with various factors of population composition, *e.g.*,

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age, nativity, race, social status, etc., we can only partially know the differences in birth rates between social and regional groups. It is of great importance to know that region A is increasing from an excess of births over deaths faster than region B, or that group X is contributing more to the next generation than group Y. From such data we can hope to learn not only what the differences in the birth rates of different communities are but also what are the factors which control the birth rate. Such information will be extremely useful if ever the community sees fit to venture upon a rational control of population growth. A full knowledge of the differential birth rate is important both because there are differences in the hereditary quality of different groups and also because the educational and social differences between groups of our population may give direction to future social development. It is not surprising, then, that the demographer wants to know the general economic and social background of all children born and of all persons dying. It is important to him to know not only that farmers generally have larger families than lawyers, doctors, and other professional people, but also how much larger these families are, and whether there are significant regional differences. Furthermore he needs to know whether laborers have higher specific death rates than teachers or skilled mechanics, and if so how much higher these rates are. Clearly nothing like an adequate inventory of population movements is possible without very accurate and detailed birth and death registration.

Again, it is important to the demographer to know the age of all mothers giving birth to children, by their nativity and their race. Nor is it sufficient to give merely native born, foreign born, and Negro mothers, nor to lump together Mexicans, Indians, Chinese, Japanese, and Negroes under the rubric "colored." Likewise it is necessary to know the occupation of the head of the family if we are to get any satisfactory notion of the relative rates of increase in different social classes and of the differences in death rates between these classes; and all this information should be available for all sizes of communities. It would be a fine thing, too, if the census classification of occupations and the vital statistics classification could be so related that accurate birth and death rates for different occupational groups could be calculated.

Furthermore the demographer would like to be able to calculate the death rates from the more important causes of death for particular communities, since without such rates he cannot very well understand the differences in their population movements. At present he can do little in this field because of the failure to allocate deaths to usual place of residence for different sizes of communities.

This matter of the proper allocation of births and deaths to usual place of residence is of much greater concern than is generally realized. A good beginning was made some time ago, but most of the gains then made have now been lost. Even at its best, however, this allocation of births and deaths to place of usual residence has never been detailed enough to enable the demographer to calculate age-specific rates for urban and rural populations and for different sizes of urban communities. Nor has it given the details which would permit of calculating these rates for the important nativity and racial groups.

It needs no argument to convince anyone that the increasing use of urban hospitals by rural people is rendering urban and rural rates, as now generally calculated, of no account. Obviously if an appreciable proportion of the

births and deaths of rural residents occur in city hospitals both rural and urban rates are thrown askew and we cannot know just how they differ or even whether they differ at all. The demographer is extremely anxious, therefore, to have birth and death registrations recorded by place of usual residence for all sizes of communities, for all race and nativity groups, and for different social classes. At present all we know is that rural birth rates and death rates are generally too low while urban rates are generally too high and that the rates of most of these other groups differ from one another. Hence, we are not able to calculate satisfactory life tables for different types of communities, to study differential birth rates in detail, nor to calculate occupational death rates with any degree of certainty. In attempting to compare even crude urban and rural death rates at the present time we are compelled to compare states which are chiefly urban with states which are primarily rural rather than to compare actual urban and rural communities. One need scarcely say that such a procedure is far from satisfactory, while in studying many other group differences we are even more at sea. One of the most urgent problems in the field of vital statistics is to secure the proper allocation of births and deaths to the community of usual residence and then to tabulate results in such detail that a true picture of population movements can be drawn. It is devoutly to be hoped that the influence of this organization will be exerted to the utmost to secure these improvements in our vital statistics.

The demographer also feels that there is need of closer coöperation between students of vital statistics and those interested primarily in population. Closer collaboration between officials in these fields would enable both to make their data more useful to the demographer and indeed to the public at large. If the vital statistician knew that he could get the needed population data it would be possible for him to make more elaborate tabulations of his data in and near census years and thus carry forward many interesting and instructive studies at those times. I do not believe I exaggerate when I say that population and vital statistics studies have both suffered considerably from the lack of closer coöperation. This should not be.

The demographer also needs uniform data for all groups from all areas. Unfortunately such uniformity does not now prevail. As a concrete instance of lack of uniformity I may cite the fact that in some states Mexican births and deaths are included with those of the white population, while in others most of them are listed as Mexican. As a result of such confusion we can secure little real information regarding the population movements of either the whites or the Mexicans.

Finally I would say a word about marriage data. These are not as important to the demographer as birth and death data but they are sufficiently important to merit more careful registration and tabulation than they now get. Changes in age at marriage, proportion of remarriages, proportion of mixed nativity and racial marriages, and many other facts with regard to marriage would assist materially in keeping our population inventory up-to-date so that we could evaluate more accurately population growth in relation to the general situation at any given moment. At present we have no federal agency gathering data on marriage and divorce. Furthermore such data as have been gathered in the past are pitifully inadequate to show the movements in this field. It is greatly to be hoped that this type of vital statistics will soon receive a much larger meed of attention.

Consumer Demand for Vital Statistics*

Viewpoint of the Registrar

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THE viewpoint of the registrar on the consumer demand for vital statistics often appears to be quite different from that of the consumer. There is a justifiable difference between the viewpoint of the consumer as to what constitutes a reasonable demand and the viewpoint of the state registrar who produces the data to meet the demand. The very fact that this word "viewpoint" has been used is a real indication that the consumer and the producer are getting closer together in their ideas and will undoubtedly make the work of each much more valuable through mutual understanding and hearty coöperation.

We have traveled over many rough roads in the field of vital statistics in this nation. Many of these roads, however, have now been paved or hard-surfaced through education and progress. It is encouraging to note that the state registrars are endeavoring to meet the demands of the consumers and, on the other hand, the consumers are qualifying their demands so that they are more in keeping with what is possible to produce.

In the beginning, the consumer should be advised that the equipment for producing vital statistics varies widely in different states. In some states where adequate vital statistics laws have been in effect over a long period of years and the early work of organization and the set-up of machinery for collecting, filing, and tabulating has become efficient, increased demands from the consumer are welcomed. In many states, the laws are new, the heads of registration districts who are known as local registrars are inexperienced and in most cases are busy men who can only devote a small portion of their time to registration, and in the central office a director (possibly only part-time) with 4 or 5 clerks is expected to handle registration affairs in the entire state. These are conditions which must be faced and, therefore, the consumer demands must be kept within the possibilities offered under such conditions.

A state vital statistics bureau is created and maintained by the tax payers of the state. Therefore, no matter what the consumer regards as of first importance in a vital statistics bureau, the officials in the bureau must first recognize the demands of the citizens of the state who are maintaining the bureau. From the viewpoint of the state registrar, the legal importance of the birth, death, marriage, and divorce records must be his first consideration because of his obligation to the tax payers or citizens.

To meet the need for complete legal data, it is necessary to have adequate laws and a system of registration districts in every state, numbering from

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500 to 2,000. There must be a local registrar in charge of each registration district and a state registrar who is responsible for complete registration. Original certificates must be collected from each district every month and delinquent local registrars removed or compelled to render efficient service. This, in itself, is a gigantic task in most states. Thousands of doctors, midwives, and undertakers must be supervised, and those who violate the law brought to a realization of their obligations or taken to court and prosecuted for their failure to observe the laws.

For legal purposes, a certificate should be complete; therefore, all incomplete certificates must be completed either through correspondence or personal contacts. Aside from the field work, in the central office the original certificates received must be carefully studied, corrected, and systematically filed. An alphabetical index is then an important routine which demands an amount of time which is no small consideration. From the records thus made available, certified copies are issued in enormous numbers. The task of searching through these records and issuing certified copies appears to have first place in the routine duties of a state registrar as these records are needed for court cases in deciding inheritances, payment of insurance policies, entrance to school, passports, veterans' compensation, and individuals' rights to accept employment and for many other purposes which have become more or less generally known.

Ten thousand certified copies in a single year for a population of 1,500,000 is not considered a high ratio for this class of work. Can you visualize the field work and office work and the amount of money for postage, clerical help, office rent, typewriters, furniture and fixtures necessary for producing the data outlined thus far? Can you imagine an office force in a state vital statistics bureau of 4 clerks, and expect complete registration and a systematic filing of records for permanent reference? More than one state has an office force in vital statistics thus limited.

Probably next in order is the obligation of the state registrar to the state health officer, state commissioner of health, and workers in the public health program of the state. Tabulations must be prepared for current releases, indicating the number of deaths from preventable causes for cities and counties within the state, and primary information as to the source or origin as well as the exact place of death, as a starting point for the health officer, epidemiologist, sanitary engineer, and public health nurse. This information must be available promptly each month with a résumé of accumulative totals by ages and by months, infant and maternal mortality rates, and disease rates for cities and counties. Annual tabulations for the previous year must also accompany this information for comparisons. Every state registrar who is faithfully performing his duty must have his vital statistics records in proper form for the state board of health at the earliest possible moment each month, as this information is a very important and essential part of the health workers' equipment.

The next obligation of a state registrar is to have a complete transcript of each birth and each death certificate promptly forwarded every month to the U. S. Bureau of the Census. While this part of the work does not require a great deal of time, it is of great importance and is an obligation that should be met very promptly each month. Each registration district is an important unit in a state, and each state is an important unit in national registration. The coöperation of all

will, therefore, build a reservoir of reliable information from which the consumer may draw to meet his demands. The foregoing is a basic set-up for building and maintaining vital statistics records. Demands of the consumer, however, have been growing by leaps and bounds, and to meet the demands, the producer must still struggle for a larger crop and break this crop down into more sub-divisions to keep pace with current demands.

For working rates, authentic population figures must be available. Population estimates by years for cities and counties are necessary. This single item is much more troublesome and has drawn on the nervous energy of the state registrar to a much greater extent than some of the other problems which on first thought might be considered more difficult. Uniformity of rates will be had in proportion to the accuracy of the data collected and the reliability of population estimates used.

Specialized groups have a tendency to get far beyond the advancement of the average mind. Leaders should lead but the leader certainly should not get so far in advance of the average individual that he is lost. A planter may have definite knowledge as to the proper procedure in planting seed but results will be obtained to the extent that he imparts that knowledge to the laborer who does the planting under his supervision. The point is that the seed must be planted properly if a harvest is to be expected. A health officer may know the rules of living but his constituents in the state will enjoy good health only in proportion to the amount of his information that is imparted to the citizens of his state.

In addition to institutes and study groups, it is of vast importance that the public press be used intelligently for disseminating information of an educational nature. This may be accomplished in various ways. One method that has proved its worth is for the state registrar to become personally acquainted with a member of the newspaper staff in his community, cultivate his friendship and good will, have him call daily or several times each week, take him into his confidence, and talk vital statistics. If the state registrar will discuss his problems with the newspaper representative, it will create his personal interest in vital statistics by broadening his knowledge of the information that is available through central registration. A newspaper representative who has a working knowledge of vital statistics will write a much more beautiful and instructive news release than would be possible without his first having become acquainted with the material, its value, its importance, its necessity and its possibilities. To make vital statistics useful and helpful, it is necessary to have a thorough knowledge of the data and if the press reporter is without this knowledge, there is grave danger that more harm than good will result from press releases. A newspaper representative of character who has the confidence of the state registrar will publish helpful facts, educational material, and draw a true picture which will enlighten the citizen of his state.

A newspaper man is looking for news. If a state registrar is too scientific to be interested in news, the newspaper man will publish vital statistics according to his own ideas. There is news in vital statistics and there is material in every vital statistics bureau that is of interest to the public at large. The state registrar, therefore, should have a hand in guiding the press representative in selecting material which is honest, interesting and educational. This phase of the program of promoting vital statistics is of paramount importance.

Safety councils, insurance companies,

social workers, universities, public schools, public speakers, and a host of others keep a continuous flow of questionnaires coming to the vital statistics bureau. Every reasonable demand should be met by the state registrar in so far as it is physically possible. The state registrar is anxious to coöperate in every way. In states where vital statistics laws have been in effect long enough for the bureau to be well established, it is quite simple to cooperate liberally. On the other hand, in states where there is a very small group of workers in a vital statistics bureau and the daily load is heavy, it is often impossible to meet all demands.

The type of program that has been prepared for this Section meeting is an indication of a more sympathetic understanding between the producer and the consumer. When the producer realizes the needs of the consumer, and the consumer realizes the handicaps under which the producer is working, they will then find it not only possible but a pleasure to coöperate with each other. May we all look forward to the time when every bureau in the United States will have adequate funds, sufficient office and field personnel, and competent supervision to make available the necessary information to meet all the demands of the consumer.

Negro Physicians' Memorial Meeting

THE John A. Andrew Clinical Society, organized April, 1918, "for the advancement of Negro physicians and surgeons in the science and art of medicine and surgery and for the study and treatment of morbid conditions affecting thousands of needy sufferers in this section of the South," held its 25th Annual Clinic and 19th Annual Meeting at the John A. Andrew Memorial Hospital, Tuskegee Institute, Ala., April 5–11, 1936.

Some Practical Considerations in B. Pertussis Vaccine Preparation*

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IN the preparation of all bacterial vaccines, the essential problem is the same—to make available the specific antigens in a product which is safe for injection. But even the simplest preparation—a killed suspension of the bacteria concerned—involves innumerable technical difficulties. Before there is any basis for expecting satisfactory results, the requirements for an active vaccine must be determined and met. It seems entirely possible that failure at this point is responsible for the irregular, unsatisfactory results of various workers with *B. pertussis* vaccine—results which led to its omission from the list of *New and Non-official Remedies* of the American Medical Association in 1931.[1]

Recent reports, especially those of Madsen,[2] Sauer,[3] and our own,[4] in which more encouraging results have been obtained, emphasize particularly the need for using antigenically active cultures. A basis for considering this of great importance is found in the bacteriological studies of several workers, more recently by Leslie and Gardner,[5] Lawson,[6] and Shibley and Hoelscher.[7] In order to have clearly in mind the essential features of the preparations in use for these more recently reported studies, certain details of preparation and dosage are compared in Table I. The Kreuger antigen,[8] an extract of *B. pertussis*, is not included because it is outside the realm of the present discussion, which is concerned only with suspensions of whole bacteria. Future work may develop a more nearly optimum antigen for pertussis immunization. The immediate need however is an adequate trial of the whole organism suspension to form a basis for judging other preparations.

In comparing the 3 products in the table, it is seen that they are essentially similar. Each is made from "recently isolated" *B. pertussis* cultures, presumably Phase I, grown upon potato-glycerin agar enriched with blood. Each vaccine is standardized to 10 billion organisms per c.c. and is killed with a chemical agent. The chief difference between Madsen's and the other two workers' is in dosage, Madsen using a total of only 2.2 c.c. as compared with the 7 or 8 c.c. given by the others. The other differences are in kind of blood used to enrich the medium, in certain details of seeding and harvesting, and in choice of a killing agent. There is no experimental proof that these differences have any marked effect on the final product.

Last year we [10] discussed some of the basic problems connected with *B. pertussis* vaccine including choice of cul-

* Read before the Laboratory Section of the American Public Health Association at the Sixty-fourth Annual Meeting in Milwaukee, Wis., October 7, 1935.

TABLE I

COMPARISON OF VACCINE PREPARATION AND DOSAGE

Comparison of	*Bacillus Pertussis Vaccine Used by:* *Madsen*	*Sauer*	*Kendrick and Eldering*
Cultures Used	"Young strains" (Leslie & Gardner)	"Recently isolated"	"Phase I" (Leslie & Gardner)
Culture Medium			
Base	Bordet-Gengou + *Nutrient agar	Bordet-Gengou	Bordet-Gengou + 1% proteose-peptone
Blood	Horse 28%	Human 16%	Sheep 15%
Technical Factors			
Killing agent	1% formalin	0.5% phenol	1:10,000 merthiolate or 0.5% phenol
Washing	not recorded	none	once washed
Organisms per c.c.	10 Billion	10 Billion	10 Billion
Dosage			
Total	2.2 c.c.	8.0 c.c.	7.0 c.c.
Individual doses	I 0.5 II 0.7 III 1.0	I 1.0 + 1.0 II 1.5 + 1.5 III 1.5 + 1.5	I 1.0 II 1.5 III 1.5 IV 1.5 + 1.5
Interval	3 to 4 days	1 week	1 week

* Formula given by J. J. Miller *

tures, kind of medium, harvesting and washing of suspension, and standardization and testing of the final product. Certain inherent difficulties in the procedure were recognized. The experience of another year has called to our attention certain points which have been of practical value in our own work.

In the choice of cultures we have emphasized the importance of using those having Phase I characteristics. While these constitute most of the cultures isolated from patients with whooping cough, we should not lose sight of the possibility of an occasional atypical or related strain being encountered. We have isolated 9 cultures from patients with whooping cough which did not have all of the characteristics of Phase I *B. pertussis* but showed certain relationships to *B. bronchisepticus*. These cultures will be more completely described in a separate report. It is of interest that 1 of these strains was isolated from a vaccine-treated child who had clinical symptoms of mild whooping cough. We do not know as yet the significance of the finding of these cultures in relation to specific immunization but they do raise a question which requires further study. In the meantime we adhere strictly to the use of only Phase I cultures in *B. pertussis* vaccines.

An important practical problem in the preparation of the vaccine is *increasing the yield*. We have tried the addition of various substances to the Bordet-Gengou medium. Of those used, including lactic acid, cysteine, starch, yeast, and various carbohydrates and peptones, proteose peptone had the most marked effect. The

addition of 1 per cent of this peptone to the base medium, all other details of procedure remaining unchanged, approximately doubled the yield on the first sub-culture. In order to determine any possible effect upon the state of the organism, comparative agglutination tests and rabbit skin tests were made on the 10th successive sub-culture. No change in the organism could be detected by these tests. Colony appearance including hemolytic zone were typical on first sub-culture back to the unmodified medium. However, since the growth on the peptone medium is quite heavy, the cultures tend to die rather rapidly when stored, and stock cultures are kept with greater safety on medium without peptone. Adaptation of the organism to the peptone medium is not necessary. The first sub-culture seems to grow as heavily as do later ones. Subsequent trials with neopeptone showed it to be as effective as the proteose. Bacto peptone does not appear to increase the growth.

In connection with increasing the yield, the importance of a *heavy inoculum for seeding* cannot be too strongly emphasized. In early lots of vaccine we used the growth from 1 slant to plant 1 500 c.c. Blake bottle but found a heavier inoculum was needed. We now use the growth from the regular vaccine bottles or flasks for seeding—1 bottle yielding sufficient growth to plant 6 or 7 others of the same size. If 500 c.c. Blake bottles are used, the inoculum per bottle is approximately 3 c.c. of a 10 billion per c.c. suspension.

Another factor of importance in increasing the yield is the *extension of the incubation period* from the usual 48 hours to 72 hours, at which time the culture's growth is at its maximum. Beyond the 3rd day the growth becomes more adherent to the medium, making harvesting difficult. In order to detect any possible change in a culture incubated for longer than 48 hours we compared suspensions of a culture incubated for varying periods up to 6 days. The agglutinability with Phase I serum and skin test reactions in rabbits were practically the same. The suspensions were tested also for virulence. An experiment using 18 mice indicated no marked loss in virulence with longer incubation periods until 5 to 6 days—the suspension from the 6 day culture killed none of 3 mice while the 72 hour culture killed all of 3 mice. The 72 hour culture appears to be at its height with respect to cultural characteristics, ease of harvesting, and quantity of growth and therefore is being used for vaccine production.

Standardization of the strength of the final suspension has received considerable attention. Several methods of adjusting the suspension to 10 billion organisms per c.c. have been tried. Widely divergent results, even by the same individual were obtained with counts both by Wright's method and by direct counts in a Petroff-Hauser chamber. Only by averaging an extended series of counts on any particular suspension can one hope for a relatively accurate result.

Not satisfied with counting as a routine procedure, we tried the *Hopkins' method* and found that a 0.3 per cent suspension—that is, one in which the packed sediment obtained by centrifugation represents 0.3 per cent of the total volume—was comparable to a 10 billion suspension as determined by a long series of counts. Our first observations on a number of suspensions showed that repeated Hopkins' tube findings on the same lot of vaccine checked closely, and the method seemed practicable. Since then, we have had several lots of vaccine that could not be standardized in this way as the sediment would not pack

tightly in the tube and the supernatant fluid remained somewhat cloudy even after prolonged centrifugation. As a further disadvantage of this method, the suspensions to be standardized had to be adjusted by turbidity to approximately 10 billion per c.c. before testing by centrifugation, if uniform results were to be obtained. For example, if a suspension giving a Hopkins' tube reading of 0.6 per cent is diluted 1:2 and retested, it does not give the 0.3 per cent reading that one would expect but one below that figure.

We thought that possibly adjustment according to turbidity would assure more uniform preparations than the other methods tried. After adjustment of many suspensions we adopted a technic which requires comparison of several dilutions of the vaccine under test with a graded series of turbidity standards. These standards are prepared from a *B. pertussis* suspension which has been standardized according to a series of counts and Hopkins' tube determinations. It is important that the standard suspension be prepared under the exact conditions of the vaccines to be standardized. For example, a 10 billion per c.c. standard prepared from a washed filtered suspension might not be comparable in turbidity to one prepared from an unwashed suspension which has retained some opacity due to medium products.

We believe that a turbidity method properly carried out is as practicable and reliable as any other so far proposed. It is significant that others who have given this matter consideration have come to a similar conclusion. In the *Annual Report* of the Division of Laboratories and Research of the New York State Department of Health for 1933, Dr. Lyall states that the standardization of suspensions of *B. pertussis* by turbidity had been adopted and that the method had proved dependable.

In *testing the sterility* of *B. pertussis* vaccines certain growth requirements of the organism should be considered. Since *B. pertussis* grows with difficulty, if at all in deep layers of broth, the usual dextrose broth sterility tubes are insufficient for testing this vaccine. We have therefore added to the usual sterility tests, platings of the vaccine on pertussis vaccine medium and on blood agar. These plates are used in preliminary tests as well as in the final tests made from the filled containers. Although the primary purpose in using solid medium was to determine whether or not *B. pertussis* had been killed, we found on several occasions that certain contaminants that failed to grow in

TABLE II

AGGLUTININ PRODUCTION BY VACCINES STORED FOR VARYING PERIODS

	Freshly Prepared Vaccine			*Vaccine After Storage*		
Vaccine Lot No.	*Storage Period*	*Rabbit No.*	*Agglutination Titer*	*Storage Period*	*Rabbit No.*	*Agglutination Titer*
(Merthiolate) 1:10,000						
16/20	7 Da.	R 157	1:20,000	15 Mo.	R 182	1:10,000
23	3 Mo.	R 174	1:10,000	.....	.....	.....
28	4 Da.	R 186	1:25,000	.....	.....	.....
(Phenol 0.5%)						
7 CB	1 Mo.	R 155	1:25,000	16 Mo.	R 183	1: 2,500
7 CB	1 Mo.	R 156	1:25,000	.....	.....	.....
7 M	2 Mo.	R 166	1:15,000	10 Mo.	R 184	1: 5,000
26	2 Mo.	R 180	1: 7,500	10 Mo.	R 185	1: 2,500

the broth were detected on the plates. This is in accordance with the report of Rosenstein and Levin,[11] who concluded that both solid and liquid media are necessary in testing the sterility of biological products.

The *keeping quality* of the vaccine is an important consideration. We were interested to know whether the antigenicity of *B. pertussis* near its expiration date—should that be placed, as usual for other bacterial vaccines, at 18 months after its preparation—would vary markedly from that of a relatively fresh preparation. We compared some suspensions of varying age as to their agglutinin production in rabbits under the same conditions of injection and testing. The titers obtained 1 week after the last injection are given in Table II.

Seven rabbits injected with vaccines not more than 3 months after preparation gave titers ranging from 1:7,500 to 1:25,000. Definitely lower titers—from 1:2,500 to 1:10,000—were obtained in 4 rabbits injected with vaccines stored in the cold room from 10 to 16 months. Vaccines 7 M and 7 CB tested before and after storage showed the greatest loss in ability to produce agglutinins. As these suspensions were phenolized, the question arose as to the effect of the preservative on the keeping quality of the vaccine. The suspension preserved with merthiolate did not show as marked changes in agglutination titer after storage. However, a series of opsono-cytophagic tests on the same animals showed no such differences between fresh suspensions and the older ones. The really significant point is whether there is a loss of protective power with continued storage of the vaccine. Information can be gained on this point only after we can analyze the cases of whooping cough in vaccine-treated children correlated with the age of the vaccine used.

No attempt is made in this report to give the detailed methods of vaccine preparation which we are using. The outline of technic is included in the manual of methods prepared by Dr. Stovall's committee.[12]

SUMMARY

The addition of proteose or neopeptone to the base of Bordet-Gengou medium has been found to increase the growth of *B. pertussis*, thereby increasing the yield for vaccine. Other factors which have been found to influence the yield favorably are the use of a heavy inoculum for seeding and an incubation period of 72 instead of the usual 48 hours.

Comparative tests indicate some decrease in the ability of suspensions more than a year old to produce agglutinins in rabbits, compared with relatively fresh suspensions. No particular difference due to age is indicated by opsono-cytophagic tests. Information is lacking as to the correlation with protective power.

Mention is made of a small group of cases of whooping cough in which *B. pertussis* was not isolated; the organisms isolated had certain characteristics of *B. pertussis* but were definitely related to *B. bronchisepticus*. The question is raised as to the possible significance of these cultures with respect to specific immunization.

For standardization of the final product, it is suggested that under the specified conditions, turbidity comparisons with a graded series of dilutions of a standard suspension give relatively uniform and reliable results. In the testing of the final product for sterility, the use of plates of pertussis vaccine medium and of blood agar in addition to the usual sterility broth is suggested.

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Health Code on National Basis

APPOINTMENT of 8 health officers to an advisory board which will aid in formulating a standard public health code was announced on April 18 by the U. S. Public Health Service. The aim is to assure the coöperation of cities and towns in a project sponsored by the Treasury Department.

Chief benefits from the formation of such a code will be that every community in the country will have before it a model that has resulted from group and national judgment, giving it a much sounder position.

The advisory committee will hold its first meeting this summer. Those appointed are W. F. Walker, Dr.P.H., Commonwealth Fund, New York; H. F. Vaughan, Dr.P.H., City Health Commissioner, Detroit, Mich.; Hugh R. Leavell, M.D., City Health Officer, Louisville, Ky.; A. D. Weston, Chief Sanitary Engineer, State Health Department, Boston, Mass.; H. A. Whittaker, Chief Sanitary Engineer, State Health Department, Minneapolis, Minn.; J. N. Baker, M.D., State Health Officer, Montgomery, Ala.; Earle G. Brown, M.D., State Health Officer, Topeka, Kan., and George C. Ruhland, M.D., Health Commissioner, District of Columbia.

The first problem will be for each city or community to bring its present health code into conformity with a tentative draft under 5 headings:

1. Organization
2. Control of cases of communicable diseases
3. Control of environment; including food and meat, food establishments and restaurants; milk and milk products; ice cream and other frozen products; water supplies, excreta, insects and rodents, industrial sanitation, schools, swimming pools, tourist camps and homes, barber shops, buildings and premises, smoke abatement, domestic animals and pests, disposal of dead bodies, and nuisances
4. Birth, morbidity and mortality reporting, and the keeping of records
5. Education and publicity and the right of entry

Relationship of the Public Health Nurse to the Part-time Local Health Officer in Communicable Disease Work*

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ABOUT 1 year ago a study was undertaken in certain representative counties of New York State, to determine the status of communicable disease nursing. This study was instituted partly as a means of gaining the interest and attention of the local workers in the educational program tentatively planned for them; and partly to gather information regarding present practices in communicable disease nursing.

Investigation showed a wide diversity of thought and practice, and it was soon realized that the content of a communicable disease nursing program was so poorly outlined that the relationship of the health officer to the nurse in this work needed definition, as the division of labor between the two was seldom clear. Therefore, early in the study attention was directed to this fundamental problem of interrelationship of health officer and public health nurse, upon which all details of practice and procedure must be based. This paper is a progress report on a study designed for this purpose.

The organization of local health work in New York State with respect to local health officers and public health nurses should be understood. Each incorporated village and each township in a county is required to have a health officer (unless a county health department is established), though occasionally the same physician is health officer for one or more townships. There is no such requirement in respect to public health nurses, and the number of official public health nurses in a county depends upon the wishes of the political governing body, consequently is a very variable quantity. The situation in Onondaga County outside of Syracuse is typical of a good many in the state. It might be considered a good example of the mean, as there are counties with only 1 county nurse for 16 or more health officers, and others with 1 nurse to each 2 or 3 health officers. In this county, there are 4 county nurses, 1 township nurse and 25 health officers serving a population of about 90,000. The 4 county nurses each cover 6 health officers' districts and the township nurse has 2 health officers' districts. This arrangement means that each health officer has only one-sixth of a nurse's time and therefore the relationship is not nearly so close as it would be if their territories were coextensive, and 1

* Read at a Joint Session of the Public Health Nursing and Epidemiology Sections of the American Public Health Association at the Sixty-fourth Annual Meeting in Milwaukee, Wis., October 9, 1935.

health officer had the full time of 1 nurse whose activities he could direct.

The study was conducted by means of personal conferences with the local health officers, and group and individual conferences with the public health nurses, including school and all other nursing agencies in a district. Districts were chosen which represented different types of population in various sections in the state. One hundred and twenty-three health officers were interviewed in 11 counties which included rural areas in the center of the state where dairy farming is the main occupation, counties in the Adirondacks, a mountainous section, counties on the Hudson River and in Nassau County on Long Island, the last named a densely populated largely suburban area. Sixty-two nurses were seen in individual conferences and 23 group conferences were held with an attendance of about 250 nurses. Discussion was encouraged, and the investigator gained much information in this way. No set form was used in the investigation but an attempt was made to obtain answers to the following questions:

1. What was the relative importance of the communicable disease service in the public health nursing program as carried on in these counties? and what was the amount of actual nursing care given?
2. How many health officers visit all cases of communicable disease reported to them?
3. In how many localities does the public health nurse visit all reported cases?
4. When the nurse does not visit all reported cases, on what basis and by whom are the cases she visits selected? Does she select the cases to be visited, or does the health officer do so?
5. Is the nurse informed of the incidence of communicable disease in her territory?
6. What is the teaching content of the nurse's visit?
7. Who does the following procedures:
   a. Taking throat cultures for diagnosis and for release, of cases, and contacts?
   b. Obtaining typhoid specimens?
   c. Making out epidemiological investigation cards?

Other questions, such as the type of nursing record used, the system of reporting between health officers and schools, the use made of pamphlets giving information about the diseases, etc., were investigated, but these are not pertinent to the particular phase of the study here reported.

The diversity of practice and thinking will be clearly seen in a detailed analysis of the material gathered in these conferences. It was found that the 123 health officers could be roughly classified in respect to communicable disease procedures into 3 groups: (1) 57 who thought communicable disease cases should be visited routinely by the public health nurse; (2) 44 who thought only certain types of cases should be visited, and (3) 22 who did not think the public health nurse should visit any communicable disease cases except in rare instances.

In the first group of 57 were included only the health officers who thought the nurse should be informed of every reported case of communicable disease in her territory and should visit all of them as the health officer's deputy for purposes of instruction and demonstration. She should visit them, making the selection of cases—if all could not be seen—according to the disease, the age of the non-immunes in the family, and other such criteria, rather than according to economic status or the wishes of the private physician.

The second group of 44 thought the nurse should only visit certain groups of people, such as indigents or the foreign born. Among the 44 were included those health officers who were not particularly interested in communicable disease, or had had very few cases in their territory, or saw no great need for a nurse's visit, but were perfectly agreeable and willing to have her visit.

The remaining 22 definitely did not wish the public health nurse to visit

communicable disease cases unless they called her for some special reason. The reasons they did not wish her to do so included the following:

1. That it was not safe to have a nurse visit communicable disease cases and other cases at the same time. (Health officers expressed this opinion either as their own or one felt so strongly by the community that they would not dare oppose it.)
2. That there was no need for a nursing visit; the families could take care of themselves, and understood the regulations. (This same reason was given in a rural section where the people were said to be "self reliant" and in a wealthy residential community where most families had a private duty nurse.)
3. That the health officer himself made all the visits and that he gave detailed and careful instruction, rendering the nurse's visit superfluous.
4. That the families would object to being visited by a county nurse because they thought her sole function was care of the indigent.
5. Personality difficulties between the health officer and nurse accounted for a few of the objections.

Exclusive of the cities, in 9 local health officers' jurisdictions, the public health nurse is informed of every reported case of communicable disease. In 3 local health districts, all in Nassau County, the nurse visits in place of the health officer to instruct the family, and the health officer is called only if there is some special problem. He continues, as in other communities, to diagnose cases which do not have a physician, and to render consultation service to the private physician. In the other 6 districts (all in 1 county) the nurse's visit supplements the health officer's to cases that are quarantined; but when cases do not have to be quarantined, her visit frequently takes the place of the health officer's. Some county nurses recorded no communicable disease visits for a whole year, though probably a few were made and not recorded.

The removal of stringent quarantine regulations on measles and whooping cough has apparently had one rather unfortunate result. Many of the health officers think in terms of legal requirements and faithfully visit and instruct in all diseases that have to be placarded, such as scarlet fever and diphtheria, but as soon as this requirement is removed they stop visiting. As whooping cough has been causing more deaths in New York State than any other common communicable disease, and measles ranks second or third, depending on epidemic conditions, serious consideration should be given to methods which will keep these diseases under the supervision of the health department without imposing unnecessarily burdensome regulations.

There are those who believe that this is a place where the public health nurse can be of most service, for she can instruct regarding nursing care and urge continued medical attention even when there are no restrictive measures to be enforced; but in most instances the nurses have not recognized this opportunity, and in several communities where they visited all cases of quarantinable diseases they ignored measles and whooping cough.

Of 37 nurses for whom complete information was obtained, only 6 were informed of every reported case in their area. Only 4 of these visited measles and whooping cough as a regular part of their service. Three additional nurses were informed of, and visited only cases of quarantinable diseases.

Twenty-four of the 37 said they demonstrated or gave care where necessary, but they had no figures on the number of cases given care, and in some instances it was apparent that according to the nurse's judgment the need arose very seldom in the course of the year.

It is interesting to note that only 13 were ever called upon to make epidemiological investigations. It is hard

to know whether they are not used in this service more often because of deficiency in their basic training, or whether a nurse's investigation is inadequate due to the fact that she has so little practice.

Equally interesting is the fact that all 37 take an active part in promoting immunization against diphtheria. This might well be credited to the activities of the State Department of Health and other state-wide organizations, for in New York State as in other parts of the country a definite intensive drive was carried on to promote diphtheria immunization. The element of competition has entered in as this is a fairly easily measured service, and communities, local health departments, and public health nurses have vied with each other to obtain the best record.

One wonders whether one interest must necessarily crowd out others or whether a well balanced program could not be "sold" to the communities if the same method were used and the same amount of effort put into the undertaking.

In trying to analyze the reasons why communicable disease seemed in many instances to be the stepchild in the nurse's activities, though in theory of public health nursing it has its full share of emphasis, both historical and practical reasons were found. The practical problem lies in the fact that this is an emergency service which requires a visit to the case on the same day as it is reported, and if a nurse is covering a whole county—as was true in certain counties—she obviously cannot render this type of service; but this does not account for the other counties where nursing service was fairly adequate. Here the nurse's neglect of this service could be explained partly by her own feeling of insecurity due to her lack of knowledge of communicable diseases, which goes back in many cases to the absence of practical experience in communicable disease work in training.

The history of the development of public health may also have had an influence on this phase of nursing work. The part-time local health officers began their work when sanitation and control of communicable disease were the main functions of the health department. The nurse coming later, as the first full-time health worker, when the conception of public health had grown to include preventive and educational work in the maternity, infancy, child hygiene, and tuberculosis services, started her activities in these services that were not already being covered, leaving communicable disease in the hands of the health officer. There was also an idea prevalent, which still exists in the otherwise more progressive communities, that it was not safe for the nurse to visit communicable disease cases and other cases at the same time, though not for many years has this idea prevailed in regard to physicians.

There is one other reason which is closely connected with the fact that the health officer remained a part-time worker while the public health nurse devoted her full time, thought, and energy to the development of her work; that is, that in fields where she was not entirely dependent on the health officer, where she could find her own cases, plan her own program, and then simply submit it to him for approval, she has forged ahead. In the communicable disease service cases are reported to him and unless he wishes her to visit them she has no way of even knowing of their existence. Right or wrong, she has been able to develop her infant welfare and her prenatal services, and other similar services, largely through her own effort, but in communicable disease work where she is so much dependent on the health officer, she has stood still or gone backward.

The original purpose of the study was to obtain information regarding certain phases of communicable disease nursing, but questions much more fundamental than those originally outlined were raised. The immediate teaching program had to be changed, and further study of the whole program was indicated. Plans had been made to concentrate a great deal of effort on teaching nurses how to make epidemiological investigations, but it was found that very few ever made these investigations, and that before detailed instructions in record taking were given it would have to be decided whether this was a proper function of a public health nurse. It was found that there was a complete diversity of opinion on what the nurse should do, ranging from the 2 counties where neither the health officers nor the nurses considered communicable disease part of a nurse's work to the communities where the nurse visited all cases of communicable disease and the health officer only visited for special reasons.

There was also a difference of opinion on what should be done for a case of communicable disease by the health department. In general, there has been a change in conception of the work of the health department in this service from what might be called police work, to educational work. The public health nurse has been especially trained to do educational work in the home, and for this reason, with the more recent emphasis on the importance of care and education in communicable disease control work, she should perhaps take an increasingly important part in the program.

The conclusion was that there were a great many questions regarding policies and practice which had to be answered before an ideal program could be set up.

The first and all inclusive question is, What should the nurse do in a communicable disease program? To be more specific:

What responsibility has she in reporting cases, in selection of cases to be visited in education of the community?

Is her responsibility for the service such that she ought to be informed of every reported case whether she can visit them all or not?

Should a trend toward more nursing home visits for instruction and investigation be encouraged?

Should the health officer be urged not to delegate to the nurse some of the home visiting and instruction done by him in the past?

Should the nurse make epidemiological investigations? If so, should she make all of them, or only certain ones? When and for what reasons is the line to be drawn?

In short, what is the ideal division of labor in this service between health officer and public health nurse?

The fact that the results of this study have to be framed in the form of questions shows how poorly defined the communicable disease nursing program has been, especially in those aspects that border closest on the health officer's work. Disagreement not only in practice but also in theory was found among nurses and health officers interviewed.

While this is a report of conditions found in New York State, it was thought that similar conditions might prevail in other states faced with the problem of coördinating the part-time local health officer's service with the public health nurse's, and, therefore, it would be of more than local interest.

During the coming year an attempt is going to be made in New York to answer these questions by trying different programs in the field and studying their action and the results.

A Sequel to a Public Health Ruling Concerning Streptococcic Mastitis*

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THE state law defines milk as the normal lacteal secretion of one or more healthy cows. This indicates that market milk should be produced only by disease-free cows. Furthermore the average examination of normal cows' milk, as compiled from the results reported by numerous investigators, does not denote the presence of streptococci of mastitis. A survey was made in October, 1933, to determine the condition of raw market milk, in the city of Lansing, in so far as the presence of streptococci of mastitis was concerned. This check-up was made by culturing the milk in a differential medium containing 1–150,000 gentian violet which permitted development of the streptococci, but inhibited many other bacteria.

At this time 20 dairies were selling raw milk in Lansing; 18 were producer distributors, while 2 bought milk from a few farmers and distributed it in addition to that produced on their own farms. In the initial check-up streptococci of mastitis were found in the milk from 18 of the dairies, but not in the milk from 2. The check-ups were started in 1933 and continued at intervals to the present. These results are presented in Table I and will be discussed later.

The prevalence of streptococcic mastitis among the herds was such as to warrant further attention. The following facts were deemed sufficient to permit the City Board of Health to do something about the situation:

1. In certain cases streptococci that cause mastitis have been found to be the cause of human infection. This includes the *Streptococcus epidemicus* as well as other streptococci of human and bovine origin that cause mastitis. The human infection usually takes the form of septic sore throat epidemics when *Streptococcus epidemicus* is concerned and individual cases of sore throat together with further complications when streptococci of bovine origin are involved. The city consumer as well as the farm consumer is exposed to this possible health hazard when streptococcus-infected milk is used in the raw state.

2. When streptococcus infection is present in a herd there is always danger of spread. It is important that the dairyman eliminate the infected cows from the herd if he hopes to produce a high quality milk and reduce his herd wastage.

3. The bacteriological quality of the milk produced by infected cows has a high bacteria count, poor methylene blue reduction test quality, high leucocyte content, and high chloride content which gives rise to a salty taste; in addition abnormal odors of producers' milk have been traced to the presence of excessive amounts of infected milk in the supply.

4. Since this work was started, Shaw and Beam [1] have reported that mastitis-infected cows produce 22 per cent less milk and 24

* Journal article No. 240 (N.S.) Mich. Agri. Exper. Sta. Read before the Laboratory Section of the American Public Health Association at the Sixty-fourth Annual Meeting in Milwaukee, Wis., October 7, 1935.

TABLE I

RESULTS OF EXAMINATION OF BOTTLED RAW MILKS FOR THE PRESENCE OF STREPTOCOCCI OF MASTITIS AT VARIOUS PERIODS INDICATED

Streptococci of Mastitis in Bottled Raw Milk *

Dairy	10/2/33	4/10/34	12/4/34	4/3/35	4/30/35	5/22/35	6/18/35	7/16/35	8/11/35	9/17/35	10/3/35	10/20/35
1	—	—	—	—	—	—	—	—	—	—	—	—
2	+	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	+	+	+	+	+	+	+	—	—
4	+	+	+	—	—	—	—	—	—	—	—	—
5	+	+	+	—	—	—	—	—	—	—	—	—
6	+	+	+	—	—	—	—	—	—	—	—	—
7	+	+	+	—	—	—	—	—	—	—	—	—
8	+	+	+	+	—	—	—	—	—	—	—	—
9	+	+	+	+	—	—	—	—	—	—	—	—
10	+	+	+	+	—	—	—	—	—	—	—	—
11	+	+	+	—	—	—	—	—	+	—	—	—
12	+	+	+	+	+	+	+	+	+	+	—	—
13	+	+	+	+	+	+	+	+	+	+	—	—
14	+	+	+	+	+	+	+	+	+	+	+	+
15	+	+	+	+	+	+	+	+	+	+	+	+
16	+	+	+	+	+	+	+	+	+	+	+	+
17	+	+	+	+	+	+	+	+	+	(start pasteurization)		
18	+	+	+	+	+	+	+	+	+	"	"	
19	+	+	+	+	+	(discontinued selling milk)						
20	+	+	+	—	—	—	—	—	—	(discontinued selling)		

* (+) streptococci of mastitis (—) streptococci of mastitis not present

per cent less fat than normal cows. This is sufficient to warrant some action on the part of the producer to cope with the disease.

In an effort to increase the quality of raw milk and reduce any possible health hazard the Lansing Board of Health passed a ruling reading:

> All raw milk sold in the City of Lansing must be produced by cows free from streptococcic mastitis (infectious mastitis) as determined by two weekly tests by the microscopic method described in *Veterinary Medicine*, 30, 4 (Apr.), 1935. Animals producing such raw milk must be tested every 6 months thereafter and found free of infectious mastitis. Any reacting animals must be removed from the herd.

This was passed in April, 1935, following which the testing of herds concerned was begun.

Each herd was visited and 10 c.c. samples were collected from each milking cow. The udder was wiped with a cloth moistened with a chlorine solution. Several streams were discarded from each quarter, and milk in approximately equal quantities was collected from each quarter by milking directly into the sterile tube. Cows that freshened were tested from time to time. The mastitis found in each herd upon initial test is presented in Table II, as well as the condition 6 months later. Of 316 cows being milked at the time of the check-up in April, 151 were found to be infected while 165 were mastitis-free. These results were reported to the dairymen concerned together with suggestions concerning the elimination of infected animals and replacement with mastitis-free cows. Where animals were purchased they were required to be free from streptococcic mastitis in addition to tuberculosis and Bang's disease.

During the next 6 months an educational program was followed rather than strict enforcement of the ruling. This gave the herd owners time to work out their own problems in obtaining streptococcic mastitis-free herds. Much was accomplished during this time for in the October check-up 237 cows were tested, 20 in 3 herds were infected while 217 in 14 herds were mastitis-free. Two

dairies, which previously sold raw milk, began to pasteurize due to the high incidence of infection in their producing herds. The 3 dairies now having infected cows are expecting to replace them with mastitis-free animals. Fine coöperation was experienced between the dairies and the City Health Department in advancing the standards of Lansing raw milk.

Check-ups were made on the bottled products of dairies selling raw milk (Table I). A study of these data, along with those in Table II, indicate the value of such an examination as a check on the presence of infection in producing cows. In each case where all animals were tested and the infected ones eliminated no streptococci of mastitis were found in the bottled milk. It is of interest to note that streptococci were found in the milk of dairies 3 and 11 following a period during which no streptococci were found. It was found that certain infected animals freshened, and their milk was included in the main supply. When these cows were eliminated the bottled milk again gave a negative result when tested.

The Board of Health of Flint, Mich., has passed a ruling similar to the one here discussed.

SUMMARY

A City Board of Health ruling is discussed which resulted from a pioneer effort to improve the quality of an already good raw milk supply in addition to making it safer.

Animals infected with streptococci of mastitis were eliminated thus estab-

TABLE II

THE NUMBER OF INFECTED AND NON-INFECTED COWS IN EACH HERD WHEN THE BOARD OF HEALTH RULING WENT INTO EFFECT AND 6 MONTHS LATER

	Number of Milking Cows			
	April, 1935		*October, 1935*	
Dairy	*Infected*	*Not Infected*	*Infected*	*Not Infected*
1	0	17	0	20
2	1	5	0	6
3	4	14	0	15
4	1	7	0	6
5	16	10	0	13
6	22	12	0	22
7	6	6	0	12
8	3	9	0	15
9	1	6	0	7
10	6	5	0	14
11	10	4	0	11
12	1	8	0	9
13	24	34	0	32
14	17	7	16	16
15	4	0	1	2
16	4	3	3	4
17	9	6	(Is pasteurizing now)	
18	20	0	(Is pasteurizing now)	
19	(Discontinued selling before the herd was tested)			
20	2	11	0	13 *
Total	151	165	20	217

* Discontinued selling milk

lishing streptococcic mastitis-free herds. Retests were made 6 months later and will be made every 6 months hereafter.

Animals purchased for addition to the herd were tested for streptococcic mastitis before purchase or bought subject to such test.

The producers were greatly benefitted as a result of such testing and elimination of the infected cows, for a higher quality of milk was produced and at the same time a marked decline of herd wastage resulted.

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Population of the United States

A POPULATION bulletin released by the Federal Census Bureau, estimates the population of the United States, as of July 1, 1935, at 127,521,000. The estimated annual increase since 1930 has averaged 904,000 per year; this is only slightly more than half the annual increase between 1920 and 1930, which was 1,665,000. The relative increase in population at present is about 0.7 per cent per year.

The annual increase for the United States as a whole was calculated by the use of birth and death figures (after correction for incomplete reporting), and net immigration.

No estimates for states or cities have as yet been given out, because of the difficulty of allowing for the pronounced and irregular population movements during the past 5 years.

Prior to 1930, the bureau has calculated the local populations by the arithmetic projection method. From 1930 to 1934 it has used the method of apportioning among the states and cities, the estimated increase in the country as a whole. This method allows for the fact that the average annual increase since 1930 is smaller than in the preceding decade, but also assumes a rural to urban migration which has not occurred since 1931. This method, like the arithmetic projection method, is therefore believed to be unsatisfactory for states and cities.

The use of current local data are recommended in making these population estimates. When, of necessity, the apportioning method must be used, estimates for cities and states should be checked against school enrollment figures, directory counts, and other local data which might indicate the extent of probable population growth.

A. W. H.

Practical Criteria and Methods for the Identification of Hemolytic Streptococci*

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BECAUSE of the relatively high incidence and severity of hemolytic streptococcus infections, their control is one of the major public health problems. Although progress has been made in the development of specific therapeutic measures, notably in the anti-streptococcus sera of increased potency and valency now more generally available, the efficacy of such treatment is dependent upon its administration early in the disease and thus upon prompt diagnosis. Similarly, the control of outbreaks of infections such as scarlet fever and septic sore throat necessitates early diagnosis and detection of the source of the incitant. For these purposes clinical and epidemiological observations require the confirmatory data which result from pertinent bacteriological examinations. As a preliminary step in the standardization of methods for the isolation and identification of hemolytic streptococci, tentative procedures[1] for such examinations have been formulated and submitted to the Committee on Standard Methods of the Laboratory Section of this Association.

The choice of procedures is complicated by the innumerable slight variations in the biological properties of this group of microörganisms. Thus, the differences in growth requirements and hemolytic activity—which are especially marked when the strains are first cultivated on artificial media—must be considered both in the preparation of the medium for the plating of specimens and in the incubation of the primary cultures. A 5 per cent defibrinated horse, rabbit, or human blood agar medium, the agar base of which is prepared from beef heart infusion with precautions against the loss of growth promoting substances, furnishes adequate nutritive material even for strains which grow sparsely. This medium also provides the conditions necessary for the detection of hemolysis, since it has a high buffer content and contains no added dextrose, the presence of which inhibits the hemolytic activity of some strains. Furthermore, by plating each specimen in duplicate and incubating these streak plates anaerobically and under partial carbon dioxide tension, growth and hemolytic activity are increased and the need for the more complicated technic of pour plates is avoided. The aerobic incubation of fishings to blood agar which aids in establishing their purity and the tube

* Read before the Laboratory Section of the American Public Health Association at the Sixty-fourth Annual Meeting in Milwaukee, Wis., October 7, 1935.

test for hemolysis serve to eliminate those microörganisms, such as pneumococci, which hemolyze blood agar when grown under anaerobic conditions. There remains, therefore, only the determination of the morphology of broth cultures of those fishings which induce hemolysis to establish the presence of hemolytic streptococci.

In the examination of some specimens, such as blood, spinal fluid, and in some instances purulent discharges, the finding of Gram-positive cocci which form chains when grown in liquid medium and hemolyze red blood cells suffices to establish their etiological relationship. However, the presence in the normal nose and throat and in the udders of cows of hemolytic streptococci, usually considered of little importance in human infections, makes a more comprehensive study of strains from these sources imperative, particularly when they are examined in connection with the investigation of outbreaks, in order that their probable pathogenic relationship may be established. Of the procedures available for this purpose the final hydrogen ion concentration of 1 per cent dextrose broth cultures, the hydrolysis of sodium hippurate, the fermentation of trehalose and sorbitol, and the group-precipitation test yield the most practical differential results.

Each of the biochemical tests serves to eliminate a certain number of strains which appear to play relatively insignificant rôles in human disease. Of the cultures remaining, namely those which produce a final pH of 4.6 or higher in dextrose broth, ferment trehalose, and fail to ferment sorbitol or to hydrolyze sodium hippurate, the majority belong to Group A according to the precipitation test. Since the members of this group have been found to be the strains commonly encountered in human infections, the precipitation test appears at present to be the most satisfactory single differential procedure; however, further information is needed concerning the pathogenic activities of certain other serological groups which have similar biochemical properties and are not infrequently isolated from human sources.

Until the various serological procedures for typing strains within a group are more fully investigated, evidence of the similarity between cultures from carriers and from cases in an outbreak—when both prove to be members of the group commonly encountered in human infections—must depend upon the failure to demonstrate differences between them. In such instances helpful differential data are not infrequently secured by the examination of the biochemical and toxigenic properties of the cultures. Furthermore, the study of the toxigenic characters may prove of very practical value not only in the control of epidemics but also in the treatment of cases, if and when the hemolytic streptococci are classified according to toxin group, and thus in relation to the antitoxic or antibacterial sera, rather than by disease entity.

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EDITORIAL SECTION

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WHOOPING COUGH

FOR three successive years we have published articles on whooping cough by Kendrick and her associates.[1, 2, 3] The latest paper [4] summarizes observations on 1,592 children, 712 in the test group, and 880 in the control group. There have been 67 cases of whooping cough, of which 63 occurred among controls.

We have also published the results obtained by Sauer [5] with his vaccine. Among private patients he has obtained 87.5 per cent protection in 458 children, 93.4 per cent among 604 vaccinated at the Health Department of Evanston, Ill., and 95 per cent of 242 children in two orphanages, making an average of 92 per cent protection in 1,304 cases. *The British Medical Journal*,[6] in commenting on his results, speaks of his reports as "commendably cautious." The same publication has given us a careful review of the results obtained in this country as well as others, and concludes that while we must take every possible precaution against testimony which is premature and inadequate, "there is every probability that when the proper dosage of vaccine is known we shall be able to protect children against whooping cough." The Council on Pharmacy and Chemistry of the American Medical Association,[7] in March, 1935, declined to express an opinion on any of the vaccines on the market, saying that they preferred to await evidence which was more positive than that at hand.

Sauer insists that the vaccine is an immunizing and not a curative agent, that several months are required for complete immunization, and that even by the most improved method, about 10 per cent of the treated children contract whooping cough on exposure to infection. In evaluating the usefulness of the vaccine it must be remembered that some 25 per cent of children exposed in epidemics escape even when not vaccinated. As most deaths occur during the first 2 years, he advises early immunization, and believes that the best age is between the 6th and 8th months of life. Substantially, he agrees with the authorities of the Danish State Serum Institute on these points and holds that a freshly isolated hemolytic strain must be used as antigen. For the commercial laboratories licensed by him, fresh strains are supplied monthly.

It is unnecessary to remind health officers of the prevalence and dangers of whooping cough, though there can be little doubt that the average doctor, and no doubt the public in general, regard whooping cough as a more or less trivial disease. Certainly its serious nature is not generally appreciated.

In a series of 54,000 deaths from whooping cough, more than 50 per cent occurred in the first year of life; hence it is evident that Sauer's advice of early immunization is sound. In England, there are some 2,000 or 3,000 deaths in children every year, and in London alone, 40,000 cases occur. In view of its comparatively high mortality, and the fact that treatment is unsatisfactory, in immunization lies our chief hope. Topley [8] advises careful field trials rigidly controlled before wholesale immunization as favored by Sauer can be recommended. Certainly here is a field for the immunologists. We are proud of the commendable work done by members of our Association and given to the profession in our *Journal*.

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ROYALTY AND PUBLIC HEALTH

THE journals which are reaching us from England are notable for the tributes which they carry to the late King George, who died on January 20, 1936. The world has joined with the English in their sorrow for a great and most beloved King.

Apart from the tributes to him as a man and a king, special emphasis is laid on his interest in public health. One obituary [1] says, "health, indeed, was a talent with which from end to end of his reign the King was apt to trade." *Public Health* [1] in quoting this says:

> In all probability this is true (perhaps it is the case with all who are vowed to the service of the public), and many a time in recent years that in what he did, it was duty and not his own health and strength that His Majesty had in mind, was clear. At the same time, however, if he made sacrifices of his own health it was equally clear that before him always as one of his greater concerns was the health and well-being of his people. That much of the wonderful progress in public health that marks the years of the late King's reign could be traced to His Majesty's expressed wish or initiative is certain. To some extent because of this the loss of King George must be regarded as a personal and very serious one by all engaged in the health service of the public.

The Journal of State Medicine [2] says:

> His interest in public health was but one of the many ways in which this concern showed itself. Whether it was in slum clearance and rehousing at home or in the hygiene of a dominion beyond the seas, in the welfare of mothers and children or the care of the sick, his inspiration, wise counsel, and encouragement were a constant source of strength to those whose duty it was to deal with these and other problems of public health and hygiene.

In the midst of the grief over the passing of King George, there is rejoicing that the new King, Edward VIII, shows as equally great interest as his beloved father in the cause of public health. Indeed, it is predicted that the "care of the public health will be a matter of first concern, and that the progress made will be equal to, if not indeed greater than, that which marked the period of the sovereignty of the ruler the nation now mourns." It is a matter of history that he has shown great sympathy for those whose health needs were greatest; that he made personal investigations in many parts of the Kingdom as a result of which he brought pressure to bear which has resulted in the tremendous activity now going on in England in relation to slum clearance, housing, and rehousing schemes. It is possible also that to him is due the recognition of the improvement of the problems of feeding and nutrition of the population. Happy indeed is England to have had father and son who were so much interested in the welfare of their people as successive rulers.

Public Health[3] gives a graceful acknowledgment of the cable sent by the American Public Health Association to the Royal Sanitary Institute on the death of King George. The feeling expressed on the part of our Association was sincere and was deeply appreciated by our public health colleagues in England.

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WESTERN BRANCH AMERICAN PUBLIC HEALTH ASSOCIATION

THE Western Branch will hold its Seventh Annual Meeting in Vancouver and Victoria, B. C., June 24 to 27, inclusive. Headquarters are at the Hotel Vancouver.*

Two and one-half days of the session will be devoted to joint meetings with the Canadian Public Health Association, Canadian Tuberculosis Association, and State and Provincial Health Authorities of North America. These three organizations will open their annual meeting in Vancouver on Monday, June 22. The combined efforts of the four organizations will attract a number of the leading public health authorities of this continent. There will be symposia on influenza, and health education; special sessions on vital statistics and public health nursing; discussions on control of rodent plague; industrial hygiene with special attention to silicosis; milk control; venereal disease control; tuberculosis control; the increasing public health importance of cancer and diabetes; Rocky Mountain spotted fever; and plans for a Western Public Health Training School.

The last day (Saturday) will be spent in Victoria, capital of the Province, as guests of Dr. H. E. Young, Provincial Health Officer. Members will be welcomed by the Lieutenant Governor of British Columbia and the Honorable Dr. G. Weir, Provincial Secretary. Trips will be arranged to the far-famed Butchardt's Gardens and to William Head, Dominion Government Quarantine Station. Victoria is a charming city, distinctly Canadian, with its Parliament Buildings, its beautiful port, and its delightful Empress Hotel. It is reached only by boat, either from Vancouver or Seattle.

* See page 548 for travel directions.

Vancouver is a beautiful city of approximately 120,000 population, which is this year celebrating the semi-centennial anniversary of its founding. In it is located the University of British Columbia, with its well developed public health laboratories. It is the Western terminus of the Canadian Pacific and the Canadian National Railways, and is reached from Seattle by way of the Great Northern or by boat. Large comfortable steamers leave Seattle daily at 9:00 A.M., arriving at Vancouver at 6:45 P.M., and at 11:00 P.M., arriving at 8:00 A.M.

The Western Branch meetings have been characterized by a refreshing informality, an attractive program, and a minimum of politics, factionalism, and finance. Starting with 125 members in 1928, it has now grown to well over 1,600, including 123 Fellows, 371 active members, and 1,134 regional members. Members of the American Public Health Association from outside the boundaries of the Western Branch are always welcome at its meetings.

The Canadian Public Health Association will welcome visitors to its sessions.

Dr. H. E. Young, President-Elect of the Western Branch and Chairman of the Committee on Meetings and Publications, and Dr. J. W. McIntosh, Vice-Chairman of this Committee and President of the Canadian Public Health Association, have enlisted every facility for hospitality and scientific interest in their two cities to contribute to the success of the meeting.

The officers of the Western Branch this year are: *President:* Dr. W. F. Cogswell, State Health Officer of Montana, Helena; *President-Elect:* Dr. H. E. Young, Provincial Health Officer of British Columbia, Victoria; *Vice-President:* Dr. J. D. Dunshee, State Health Officer of Idaho, Boise; *Vice-President:* Dr. J. L. Jones, State Health Officer of Utah, Salt Lake City; *Vice-President:* Dr. W. H. Kellogg, Director of State Hygienic Laboratory of California, Berkeley; *Secretary:* Dr. W. P. Shepard, Assistant Secretary, Metropolitan Life Insurance Company, San Francisco; *Treasurer:* W. F. Higby, Executive Secretary, California Tuberculosis Association, San Francisco; *Chairman of the Executive Committee:* Fred Stimpert, Director, State Hygienic Laboratory, Helena, Mont.

EDGAR SYDENSTRICKER

THE death of Edgar Sydenstricker cuts short, in middle age, a career of distinguished achievement. Entering the U. S. Public Health Service in 1915 as a statistician and economist to assist Dr. Benjamin S. Warren in a study of sickness insurance in European countries, he was almost immediately drawn into first one and then another of the field investigations undertaken by the Service, and within a few years had built up a statistical organization which gradually evolved, under his direction, into a permanent research unit, the Office of Statistical Investigations. With the exception of a little more than a year spent in Geneva, completing the organization of the Epidemiological Office in the Health Section of the League of Nations, he remained in charge of the Statistical Office until 1928, when he became Director of Research in the Milbank Memorial Fund, but continuing as Consultant, an active connection with the work which he had begun in the Public Health Service.

As chief of the statistical staff of the Public Health Service he was engaged, either independently, as collaborator, or as consultant, in statistical studies covering a wide range of subjects; epidemiology, industrial hygiene, the hygiene of infants, maternity and childhood, general morbidity and mortality. His chief

interest, however, was in the great mass of morbidity and physical impairment which falls outside of the usual public health records. In this field his work was that of a pioneer surveying the ground which the public health of the future must occupy, and showing its problems in clearer perspective.

Sydenstricker was primarily a student, but his part in public health was more than the collection and ordering of facts. He was profoundly interested in their effective use for the improvement of public health and he did not shrink from meeting squarely the difficulties that stood in the way. A man of sincere and simple modesty, he established the warmest of friendships, and through his personal contacts contributed no less to the moving spirit of public health than to its factual knowledge.

EDUCATIONAL ABSTRACTS *

EDUCATIONAL ABSTRACTS, Vol. I, No. 1, for January-February, 1936, has come to our desk. There is a distinguished board of Coöperating Editors, including representatives from many foreign countries. Education is treated of from 31 standpoints. Our readers will be interested in the Section of Health and Physical Education. There are abstracts in this first issue from 11 sources, all of which appear to be well selected as far as they go.

The format of the journal is quite attractive and patterned after the *Psychological Abstracts* which were the result of many years of psychological research in the field of reading efficiency. The editors propound four questions of the educational profession, the answers to which will help them in their further plans.

We welcome this new journal and wish for it all success.

* Edited by Norman J. Powell, with five Associate Editors. Published bimonthly at Albany, N. Y.

PUBLIC HEALTH EDUCATION*

UNDER our social system it is necessary not only to win the support of the governing body, but to reach into every home, familiarize the people with the functions of the health department, and explain the activities that are being carried out to meet these obligations. . . .

A preliminary step to any advance in preventive medicine or community hygiene is a campaign to acquaint the people with the advantages of the specific methods to be proposed. This presupposes a general and widespread knowledge of the principles of hygiene and community sanitation. This condition does not exist.—W. G. Smillie in *Public Health Administration in the United States.*

To Reach Into Every Home—The above quotations are discussed by Dr. E. E. Kleinschmidt in *Public Health Reviews,* University of Michigan, Ann Arbor, Mich. March 15, 1936. *Free.*

Education of the public in hygienic principles constitutes one of the major problems of the public health administrator today. . . . As a general rule budgetary allowance for such activities are only made when city fathers are inclined to feel generous, or when they believe that a health campaign justifies a temporary expenditure. . . . Thus, in time of distress, the best and often the only contact the health officer has with the public is cast aside.

This contact with the public is often the life-line of many a health department. Leading health administrators, cognizant of the value of this phase of health work, are constantly reminding us of its importance. . . .

This problem, it would appear, narrows down to one of public health salesmanship. Civic pride in good health can and is being stimulated through methods of public education. . . .

Mass methods in public health education are both necessary and inevitable if the problem aforementioned is to be successfully met. And yet, how many health departments are able to extend themselves in this direction? Tradition, lack of social insight into matters of public health, emotional attitudes toward health, poorly subsidized health education programs in the public schools, lack of community leadership in health education —these are the paramount public health problems which must needs be solved today.

Knowing that We May Lead—To know others is set up as an essential for "Leadership in Health Education," by M. C. Coleman, under that heading in *Womans Press,* 600 Lexington Ave., New York, N. Y. April, 1936. *20 cents.*

One essential to leadership with our younger generation is that we have a working knowledge of their mental processes and gear our machinery accordingly. Young people are fully agreed with our modern health education authorities in their belief that health is a means to an end, and not an end in itself. A young woman thoroughly uninterested in your concern over her poor posture comes to life when you casually mention her winged scapulae in relation to a backless evening gown, or to the backless and almost frontless bathing suit. She may be casual over her after-exercise shower and over an unbalanced diet until you suggest that one of these may decide for her whether she will have a complexion like a peach or a prune. Your classes in creative dancing, with bared feet, have made many a girl corn-and-bunion conscious enough to ask what type of shoes she should wear. It does not in the least

* Please address questions, samples of printed matter, criticism of anything which appears herein, etc., to Evart G. Routzahn, 130 East 22d St., New York, N. Y.

matter that the girl never suspects that this is one of our objectives in the creative dance; the wisdom of the serpent and the mildness of the dove each has its place in the psychology of the group leader.

Hygeia, April, 1936 — *Hygeia*, A.M.A., 535 N. Dearborn St., Chicago, Ill. *25 cents* a copy.

The public health nurse (her function) . . . Is your child going to camp? (how to choose camp) . . . Store teeth (explaining misunderstandings and complexities) . . . The most interesting subject in the world ("know thyself") . . . How disease came with the white man (slave trade) . . . Dietary delusions (past and present) . . . Exploiting the deaf . . . The road back (physical regeneration is possible) . . . The germs we live with (tubercle bacilli) . . . Beware the tick! . . . The skin in health and disease . . . Prevent asphyxial death . . . When your child is convalescing . . . "Sissy" (a play for children) . . . The peas pudding problem (another medical mystery) . . . Carl Josef Eberth (discovered cause of typhoid) . . . Behind the "tb." headlines (young people) . . . New books on health . . . Questions and answers . . . Curious stories about health (illustrated).

In "School and Health" will be found the following:

Should we blame children? (mental health) . . . A revolution in making a course of study in Virginia . . . We want children to be happy . . . A handy reference list in teaching cleanliness . . . Forming the habit of brushing the teeth daily . . . New health books for teachers and pupils.

A Health Gadget Wanted—The Tuberculosis and Health Society, 911 Locust St., St. Louis, Mo., yearns for something or other, not expensive, not inappropriate, to be offered to the followers of Captain Hardy:

Thelma Suggett tells us that

Captain Hardy, a jolly, robust character, goes on the air at 4:30 each Saturday afternoon, with the Health Twins, Bob and Jane. At first the programs consisted of an adventure story by Captain Hardy with a subtle health angle. During the past few weeks, however, we found it more effective to dramatize the programs, giving the Health Twins major parts also. A serial is being featured now with fictitious trips to many different countries, the child listeners writing in about what countries they wish to be taken to, in their imagination. Last week, for example, the story was built around the current flood disaster with thrills and adventure, the health angle being the importance of pure drinking water, etc.

We have been sponsoring this program only since December 7, and feel that our radio audience is not now as large as it will be later. Our idea for giving away a gadget to children who write in is, of course, a stimulus to regular listeners and fan mail.

A local radio station donates 15 minutes for this program each week. They coöperate beautifully by providing sound effects, theme song, etc.

This is not the first time that we have sponsored a radio program for children, but we do feel that we have in Captain Hardy the most effective character we have discovered so far.

Send your "give away" ideas direct to Miss Suggett.

Public Health Nursing Exhibited—In the Community Fund campaign exhibition, the Evansville (Ind.) Public Health Nursing Association was presented by the following, as recorded in *Public Health Nursing*, April, 1936:

This exhibit consisted of an immense topographical map of the City of Evansville through which had been made eight rectangular cutouts which allowed the spectator to look into miniature rooms, brightly lighted, in which were scenes representing the various activities of the Association. Each Lilliputian room contained all necessary equipment and furniture complete to the last detail of ruffled curtains and well paper! Dolls dressed as patients, nurses, and doctors were the actors upon the tiny stages.

Illustrated in this exhibit were activities such as a child health conference, a tuberculosis clinic, a prenatal home visit by the nurse, care of a maternity patient in the home, bedside nursing care of the sick in the home, and a demonstration by the public health nurse of milk modification for an infant.

Below each little room there was printed on the face of the map in half-inch type a short description of the activity demonstrated therein. All the windows were numbered, and on a table near the entrance of the booth were mimeographed sheets, explaining

in fuller detail—according to the numbers of the windows—all the activities displayed within the tiny rooms. Statistical reports to show the extent of the past year's work were distributed by board members to visitors. The board members were prepared to give out any other information which might be desired about the association. . . .

The map (15 feet x 6 feet) was painted on a three piece, hinged screen made of beaver board. The health center was made the hub of the map and from this, 12 dotted lines radiated as spokes to each of the outlined 12 nursing districts. These dots were cut out and illuminated from the back through red papers so that they stood out distinctly, making the health center the "center" of all the activities of the association.

Metropolitan Publications — The pamphlets listed below are the more recent publications of the Metropolitan Life Insurance Company, New York, Ottawa, and San Francisco.

Taking Your Bearings (taking the guesswork out of life by means of periodic health examinations) . . . Infantile Paralysis . . . Industrial Dental Service . . . The Baby (has an index) . . . Calling All Drivers (a guide to better motoring) . . . Colds—Influenza—Pneumonia . . . Scarlet Fever . . . Sleep . . .

From the School Health Bureau comes the month by month 4 page *Health Bulletin for Teachers,* and "Supplementary Material for Use in Schools with the Motion Picture Once Upon a Time."

Plain Speaking in Pittsburgh— "Dread syphilis's greatest ally is the moral shudder that accompanies its mention." Thus speaking is *Bulletin Index,* 237 4th Ave., Pittsburgh, Pa. (March 5, 1936; *5 cents*). *B.I.* is an imitation, in form and style, of *Time* if *Time* concerned itself almost solely with local Pittsburgh news and interests. Notable and exceptional is its background and explanatory material.

Quoting a social hygiene meeting in New York:

The biggest barrier in the pathway of advancement and control of these diseases, the hygienists reiterated, was the fact that social customs taboo their discussion in the press and over the radio.

Gonorrheics and syphilitics, fearing the stigma of social pariahism, still foolishly hide themselves from doctors. Consequently, nobody knows exactly the extent of the diseases, all know that they loom as one of the biggest, toughest problems facing U. S. medicine.

A paragraph of statistics then leads into the Pittsburgh application, the local news, some local facts, and confusion as to a local project.

Probably few cities have such a truth telling medium among its periodicals published less frequently than the daily newspaper.

Health Education, Journal, February, 1936— In *American Journal of Public Health,* Feb., 1936, appeared material on health education, and material useful to those doing some form of health education.

In "Poliomyelitis in North Carolina in 1935," by Reynolds and Knox (page 97):

Since the State Board of Health is state-supported, it was felt that any information on this epidemic collected by the board was public property and, therefore, factual information was made available at all times. . . .

Conclusions: 1. That a daily bulletin, in which facts are given, inspires confidence, secures coöperation, and dispels fear.

In "Poliomyelitis in Tennessee," by Williams (page 103):

Fortunately for the public, the greatest prevalence was noted in the newspapers and practically every case occurring was commented on in more than one paper. . . .

Control measures advocated: 2. Newspaper articles in the form of general preventive measures released from time to time. An effort was made to give facts and at the same time avoid arousing public hysteria.

In "Social Significance of Industrial Medicine," by Kessler, are given suggestions for professional education

(page 162), followed by these references to lay education:

To overcome the reduction in the life expectancy of the average worker it is desirable that preventive work be promoted. While safety education in industry has achieved a phenomenal success in the reduction of accidents, health education in industry has failed completely in making the worker conscious of any responsibility in the maintenance of his own health. The same technic that has been so successful in combating accidents, bringing the responsibility for accidents down to the lowest executive unit, the foreman, can be applied to industrial health education. It is this same technic that has made child health education successful by making the parent, the nearest executive unit, participate through the medium of Parent Teacher Associations.

"Promotion of Certified Milk (page 180) tells of a campaign launched by producers and milk commissions, information to be secured through Dr. J. A. Tobey, 350 Madison Ave., New York, N. Y.

The group of articles and the editorial (page 181) on poliomyelitis may provide valuable background material in case of another emergency.

Certainly no reader of this department of the *Journal* will fail to read "The Psychological Factors of Health Education," by Galdston (pages 171–173).

An important announcement about certain publications of the former American Child Health Association appears on page 184.

Note "End of Year Publicity" and other topics under "The Open Forum" (pages 186–189).

Under "Books and Reports" (page 199) is a review of "Socialization of Medicine" which may be useful in answering requests for debate material.

"The Dollars Saved" diagram (page 208) might be used in staff meetings, and elsewhere.

Several desirable new members of Public Health Education Section are listed on page 209.

"News from the Field" (pages 210–214) refers to several educational campaigns.

In Newspapers and Magazines and Radio Talks—*Social Hygiene News*, 50 W. 50th St., New York, N. Y. (March, 1936; *free*), reports as follows:

Stimulated by the favorable reception of editorial comment on medical facts revealed at the New York Regional Conference in January, the *New York Daily News* recently set a new record for social hygiene education through newspaper columns by printing for its million and a half readers a series of 4 feature articles in syphilis and gonorrhea.

The text, illustrated with photographs and charts, dealt with these diseases as problems of personal hygiene and public health, stressed their dangerous communicable nature, and the necessity of securing early diagnosis and treatment if infected, described treatment, and listed sources of medical advice, and warned against quacks. A second series of 4 articles published a few weeks later, discussed preventive measures, with special reference to prophylaxis.

Captain J. M. Patterson, publisher of the *News*, and Carl Warren, special writer assigned to preparation of the articles, report many congratulatory comments received from physicians and other professional persons. General public reaction has also been wholly satisfactory, as indicated by the many inquiries received by the *News*, the City Health Department, and the A.S.H.A. The articles are expected to be available shortly in reprint form.

Other New York newspapers showed an equally coöperative spirit in reporting Regional Conference sessions. Increased space, accurate reporting, and a gratifying tendency to discard the ambiguous "social diseases" in favor of the scientific medical terms were apparent in leading dailies such as the *Times*, the *Herald-Tribune* and the *World-Telegram*.

Encouraging, too, was the 3 column report of the Regional Conference discussions and accompanying material which appeared in *Time* magazine, issue of January 28 (p. 40). This item and the current series of articles on venereal disease in *Physical Culture Magazine* have been responsible for many additional inquiries and requests for advice, literature, and information coming into the national office.

Meanwhile, a growing disposition to cooperate in public education on social hygiene has been evidenced by the radio stations. Speaking over the N.B.C. network at the annual meeting and luncheon conference of the New York Tuberculosis and Health Association on February 25, Dr. Thomas Parran included in his talk on *Health Security* a clear-cut statement on syphilis as an enemy to health. On February 4 Dr. Snow, broadcasting from WOR on *Keeping the Doctor Away*, also used medical terms. Both of these talks were as usual approved in advance by the radio authorities. It is surely encouraging to all who have public health protection at heart to see the national networks falling in line in the campaign against syphilis and gonorrhea, in which the majority of the local stations long have joined.

In response to a wide request, Dr. Snow's talk has been mimeographed (*10 cents per copy*) and it is expected that Dr. Parran's address will also be made available.

Made by School Pupils—The construction of graphic material *by* students is a particularly good channel for the introduction of health information and ideas into the classroom. Reports of what health agencies and school people have done in this direction will always be welcome for this department.

Two pictures of exhibits are reproduced in *Journal* of National Education Assn., 1201 16th St., N.W., Washington, D. C. April, 1936. *25 cents.* One is a "rotating central display," part of a health exhibit prepared by Detroit students. The other is a glimpse of science exhibit material prepared in Stevens High School, Lancaster, Pa. The making of the latter included all the steps in the study of microscopic specimen and the making of enlarged reproductions.

Visual Education Methods and Materials—Here is a partial check list of visual education possibilities for the classroom, many of which also may be utilized with adults as we find them under varied conditions. The material for the list is found in the outline of a course for teachers, "Preparing Teachers in the Use of Visual-Sensory Aids," by W. A. Yeager:

Blackboard . . . drawings . . . Sketches . . . charts . . . graphs . . . diagrams . . . posters . . . cartoons . . . maps . . . globes . . . stereograph . . . bulletin board . . . album . . . opaque projection . . . duplicating devices . . . objects . . . sand table . . . school journey . . . field trip . . . simple dramatizations . . . puppets . . . marionettes . . . pageant . . . stereopticon . . . still film and film strip . . . slides . . . motion picture.

In *Educational Screen*, 64 E. Lake St., Chicago, Ill. March, 1936. *25 cents.*

In the same issue: "Teaching Safety Through Visual Education," by H. J. Stack. Included are "Standards for Evaluating Safety Materials," covering slides, film strips, and motion pictures.

MAGAZINE ARTICLES

"Compulsory Health Insurance." Editorial which seems to urge that the failure to give adequate medical service to millions of our population is due to "retrogression in the increasing domination of the group spirit," plus "the sacrificing of individual independence." *Saturday Evening Post.* Jan. 25, 1936.

"Hospitals in the Red." An appreciative editorial. *Saturday Evening Post.* Jan. 18, 1936.

"Open Wide," by W. C. Miller, D.D.S. *Collier's.* Mar. 14, 1936. "How to see that your children's teeth fare as well as yours, or better."

"Sensitive Souls," by H. Lees. *Collier's.* Jan. 25, 1936. "One man's meat is another man's allergen."

"A Social Worker's View on Dentistry for the Masses," by D. W. Weist. *Alumni Bulletin,* University of Illinois College of Dentistry, Medical Arts Bldg., Scranton, Pa. Sept., 1936. *35 cents.*

BOOKS AND REPORTS

Disease and Destiny—*By Ralph H. Major, M.D. New York: Appleton-Century,* 1936. 338 pp. Price, $3.50.

There is no more fascinating subject than the ruthless influence of plague and pestilence upon history. There is no subject more neglected by the professional historian, who prates of wars, conflicts, and conquest, with never a word on the romantic conquest of disease; who describes the frequently futile lives of kings, emperors, and adventurers, but overlooks the careers of scientists and sanitarians; who, more rarely, recounts the customs, commerce, and morals of peoples, but fails to mention their hygiene and sanitation. Occasionally, a great epidemic receives passing mention in one of the "standard" histories, but the author seldom realizes that such a distressing event may have altered the course of history.

In this engrossing book a medical scholar reveals the dominant rôle played by disease in the destiny of nations. In 10 interesting chapters he tells the stories of the Black Death and the devastation caused by this bubonic plague; of the destruction wrought by Jail Fever, or typhus; and of the King's Evil that scrofulous monarchs could not cure. He tells of smallpox more violent than the constant wars of the Middle Ages, of membranous croup and malaria, of leprosy and yellow fever. There is a particularly interesting section on hemophilia, or the legacy of bleeding; while the final chapter is devoted to the worst plague of all, syphilis, which afflicted, among many others, the Borgias, Francis I, Henry VIII, Nietsche, and, last but not least, Nikolay Lenin.

All this is told with colorful embellishment, and with due recognition of the plague-riders who were responsible for man's inevitable victories over most of the pestilences that have inflicted him since time immemorial. Occasionally the author attributes the death of a celebrity to a cause not recognized by most of the relatively few medical historians who have investigated the subject, as when he states that George Washington probably died of diphtheria. The best evidence seems to indicate that his death was due to a bacterial infection resulting in inflammatory swelling of the larynx and air starvation. The author also repeats the famous story of the alleged infection of Francis I with syphilis by "La Belle Ferroniere," an incident regarded by most historians as a myth, or as a canard of contemporary writers.

These mild criticisms, if they are valid, do not detract from the excellence of the book, which is a most interesting, well written, and valuable presentation of authentic facts on the profound influence of disease on history. The text is very well printed and profusely illustrated. It can be read with profit and entertainment by all health workers, and it should prove instructive and pleasing to the general reader. It is, in fact, a splendid piece of work. JAMES A. TOBEY

Doctor of the North Country—*By Earl Vinton McComb, M.D. New York: Crowell,* 1936. 238 pp. Price, $2.00.

Autobiographies are always interesting. The one before us is no exception, but contains some things which we believe might well have been omitted.

Every doctor has experiences similar to those mentioned. In a comparatively new country peopled largely by those who are the immediate descendants of immigrants, experiences are apt to be a little more raw than in older communities. One story taxes our credulity. It is hard to believe that an old woman, however stubborn, could have amputated her leg just below the knee "with a few strong snips of the scissors." How did she get through the bone?

In addition to everything else, the author was at one time Health Officer of his city, which he calls "Ourtown." In spite of the hardships described, the book closes on an optimistic note, and the author would not exchange his profession for any other in the world.

Why do so many books these days have an introduction? "Good wine needs no bush."

MAZŸCK P. RAVENEL

The Tuberculin Handbook—*By Halliday Sutherland. London: Oxford University Press*, 1936. 96 pp. Price, $2.75.

This clearly written, well printed book based on 25 years' experience, contains information for tyro and expert about the use of tuberculin in diagnosis and treatment.

When symptoms, and/or physical signs and/or radiological examination suggest the diagnosis of early pulmonary tuberculosis and tubercle bacilli have not been detected in some excretion, the tuberculin test should be used. As this occurs usually early in the disease, the author devotes 23 pages to a detailed discussion of early symptoms, physical signs and X-ray changes. All adventitious sounds and tubercle bacilli in the sputum are considered "late signs." "To sum up, none of the early symptoms, physical signs or X-ray appearances are in themselves, either singly or combined, diagnostic of pulmonary tuberculosis, and the key to their interpretation is in the tuberculin tests."

Agreement with this statement rests, of course, upon the definition of what constitutes treatable early pulmonary tuberculosis. Tuberculin tests are either generic (qualitative) or selective (quantitative), which he holds differentiates between obsolete and latent infection. Many forms of the test (he prefers the intradermic with either old tuberculin or the new purified protein derivative) are generic. If positive he gives the subcutaneous test at once. Only the subcutaneous test when it is positive to a dose of 0.005 c.c. or less of O.T. is selective and indicates activity. Therefore, all reactions to such a dose indicate treatment but not necessarily in a sanatorium; nor need the patients give up work, whereas symptoms, physical signs, or X-rays, may show such to be necessary. It is to be inferred that he treats in this way patients in whom a positive diagnosis can be made only by the tuberculin test. He leads one to infer that focal pulmonary reactions are fairly common when many others find they rarely occur. He interprets slight X-ray changes by the tuberculin reaction and the tuberculin test by the X-ray findings.

He considers tuberculin as "our greatest asset in the diagnosis and treatment of tuberculosis" of every form. He uses small doses at first, and prolonged intervals if reactions occur. He quotes Gillespie's favorable results to prove the value of tuberculin. His idea is to abolish the tuberculin sensitiveness. Nowhere does he mention that allergy and immunity may not be connected.

Full details are given about technic.

The book is readable and written apparently in a restrained manner. He does not refer to the psychological side

of the tuberculin treatment. Many no doubt wish they could share his faith in tuberculin. LAWRASON BROWN

Sanitary Law and Practice: *A Handbook on Public Health—By W. Robertson, M.D., Charles Porter, M.D., and James Fenton, M.D. (8th ed. rev.) London: The Sanitary Publishing Co., Ltd.,* 1935. 968 pp.

The new edition of this excellent work will be welcomed everywhere. The Preface of the first edition stated that it was written to meet the wants of those undergoing a systematic training preparatory to presenting themselves for examination rather than to compete with works on the theoretical aspects of public health.

As we have nothing in this country corresponding to this English system, the book will evidently be of more use from that standpoint in England than in this country. However, we have derived so much from England in the way of public health that one can study her laws, regulations and orders, and the methods of carrying them out with great profit. This book is well worth careful study by all health officers as well as others interested in public health.

The amount of study involved in getting this book together, even if we consider it only from the legal aspect, has been enormous, and speaks a great deal for the industry as well as for the masterly knowledge possessed by the authors. It will be remembered that Dr. Charles Porter is a Barrister-at-Law of the Middle Temple as well as a physician and Health Officer, and no doubt this accounts in great measure for the excellence of the book. It is still known under the name of Robertson and Porter, but for this edition, Dr. James Fenton's name appears on the title page as a co-author.

The idea must not be gotten that it is entirely a book of sanitary law, although it is an excellent reference if one wishes to study the English statutes on the many phases of public health. It is a good book on practice, and contains a tremendous amount of well written and necessary information for the health officer.

The book is excellently printed and has a large number of illustrations. The appendix gives the Housing Act of 1935. A good index adds to the value of the work. MAZÝCK P. RAVENEL

Handbook of Bacteriology—*By Joseph W. Bigger, M.D. (4th ed.) Baltimore: Wood,* 1935. 458 pp. Price, $4.25.

Not only have four editions of this excellent handbook been required in the 10 years since it first appeared, but two editions have been reprinted, and a Spanish edition has been issued, which show that the book has found a place with teachers. Bacteriology is such a rapidly growing science that even specialists find it hard to keep up with all the new things, and a well digested handbook such as this is very useful not only to teachers, but to students.

The present edition has numerous changes. According to the Preface, some two-thirds of the pages have been altered. The greatest changes concern water, diphtheria and typhoid fever. The author continues to recommend "fresh, healthy human hearts" for making the antigen for the Wassermann test. In America, these can be had almost on demand in some of our gang-ridden cities, and our frightful automobile death toll would furnish another constant source provided we were allowed to do postmortems. We cannot help wondering where a constant source of supply is found in England with its wonderfully low murder record and the few fatal motor accidents which occur.

We again find that we can recommend this book. MAZÝCK P. RAVENEL

American Sewerage Practice, Vol. III, Disposal of Sewage — *By Leonard Metcalf and Harrison P. Eddy. Revised by Harrison P. Eddy. (3rd ed.) New York: McGraw-Hill,* 1935. 836 pp. Price, $7.00.

This book deals with the theory of sewage treatment and disposal, as well as the design and operation of sewage treatment plants. Since 1916, when the second edition was published, there have been many developments in the art of sewage treatment which have spread out in so many directions that the authors found it necessary to rewrite completely a large proportion of the text of earlier editions. In making the revision, an effort has been made to devote adequate space to both older and newer processes of treatment and thus to maintain a balance which would be most helpful to readers in general; rather than to devote a relatively large proportion of space to new processes. This has resulted in an increase in the chapters from 20 in the second edition, to 33 in the third edition, without materially changing the size of the volume. The book contains 227 illustrations.

Some of the more important new features of this edition are: Chapters on the characteristics and behavior of sewage and on the pollution and self-purification of natural waters; material on skimming tanks, storm-water tanks, contact aerators and separate sludge-digestion tanks; an outline of the recent developments in chemical precipitation; three chapters devoted to the theory and operation of the activated-sludge process and the general design and details of activated-sludge plants; material on the mechanical dewatering and drying of sewage sludge and on the utilization of sludge gas; chapters on the separate treatment and disposal of industrial wastes and the operation and maintenance of sewage treatment plants; data on the costs of constructing and operating certain features of treatment plants; a bibliography in practically every chapter, listing articles and books on the subject matter of the chapter.

The death of Mr. Metcalf in 1926 left the responsibility for this new edition to Harrison P. Eddy and his associates. In the preparation of this volume, information and data were furnished by many engineers and others throughout the country.

ARTHUR P. MILLER

Introduction to Public Health— *By Harry S. Mustard, M.D. New York: Macmillan,* 1935. 250 pp. Price, $2.50.

In the *Foreword* the author states:

> It is purposely brief and does not concern itself with the details of public health administration; nor does it presume to offer suggestions for classroom or field instruction in any of the specialized phases of public health practice.

The subject-matter has been carefully selected, concisely expressed, and is accurate. Dr. Mustard has had a large experience in dealing with public health operations. The points of view presented in the various chapters are dependable, and this book should be very useful as a ready reference for public health workers.

There are 12 chapters in the book. The first deals with the background and scientific basis of hygiene and public health. Historical references to some who have made significant contributions in this important field are of interest and are stimulating.

It is unfortunate that an attempt has been made to present points of view concerning medical care as a function of public health. Inadequate consideration is given to this very difficult and perplexing problem. The author could have, with profit, made a more careful analysis as to the problem of providing more adequate medical service for all

classes of the population. This might well have been omitted.

Vital statistics and public health organization and administration are discussed in 2 chapters. Appropriate reference is made to the contributions of nonofficial and the public health agencies in administrative practice and research.

The acute infectious diseases are discussed as to causes, factors concerned in occurrence, modes of transmission, preventive measures, relative importance of periods of incubation and of communicability. Attention is called to the part which the public health nurse should play in the control of certain diseases; for example, diphtheria and tuberculosis. The place of the public health nurse in the program for the control of venereal diseases is stressed.

Two chapters are devoted to environmental sanitation and individual hygiene. Sewage disposal, water and water supplies, milk as a problem in sanitation, diseases spread through water and milk, supervision of food supplies, garbage disposal, and sanitary measures for the prevention of insect-borne diseases are considered. Ventilation is discussed with particular reference to variations of temperature and humidity in relation to human comfort and health.

Childbearing and its relation to the public health, the hygiene of infancy and young childhood, and the school health service are dealt with in an interesting and practical way in 3 consecutive chapters. These are the most constructive discussions in the book and should be exceedingly helpful to public health workers. The principal elements in a maternity hygiene program are indicated. The relation which the nurse should sustain to this phase of public health is clearly outlined.

The last chapter deals with noncommunicable diseases and stresses the importance of programs for the prevention and control of cancer, heart disease, mental disease, and the relation of these activities to the general public health program.

The subject matter of this book is well arranged, clearly and effectively discussed, and its practical importance should prove suggestive and helpful in administrative procedures. It is a publication which should be particularly useful in teaching public health nurses.

There are several unfortunate mistakes in the spelling of proper names which show carelessness in publication. Otherwise, the printing is excellent.

W. S. LEATHERS

BOOKS RECEIVED

A GUIDE TO HUMAN PARASITOLOGY. FOR MEDICAL PRACTITIONERS. By D. B. Blacklock and T. Southwell. (2d ed.) Baltimore: Wood, 1935. 259 pp. Price, $4.00.

THE INTERNATIONAL LABOUR ORGANISATION AND SOCIAL INSURANCE. International Labour Office, Geneva, 1936. 219 pp. Price, $1.50.

THE SPECIFICITY OF SEROLOGICAL REACTIONS. By Karl Landsteiner. Springfield: Thomas, 1936. 178 pp. Price, $4.00.

GREAT DOCTORS OF THE NINETEENTH CENTURY. By Sir William Hale-White. Baltimore: Wood, 1935. 325 pp. Price, $5.00.

ALCOHOL: ITS EFFECTS ON MAN. By Haven Emerson. (Student's Edition.) New York: Appleton-Century. 128 pp. Price, $.80.

TUBERCULOSIS. By Gerald B. Webb. New York: Hoeber, 1936. 205 pp. Price, $2.00.

SWIMMING POOL DATA AND REFERENCE ANNUAL. Vol. IV. By Earl K. Collins, Editor. New York: Hoffman, Harris 1936. 128 pp. Subscription, $2.00.

BIBLIOGRAPHY IN HEALTH EDUCATION FOR SCHOOLS AND COLLEGES. By Mary Ella Chayer. New York: Putnam, 1936. 100 pp. Price, $1.50.

PUBLIC HEALTH NURSING. By Mary Sewall Gardner. (3d ed. rev.) New York: Macmillan. 476 pp. Price, $3.00.

CANCER COMMISSION COMMITTEE STUDIES OF THE CALIFORNIA MEDICAL ASSOCIATION. San Francisco: Stacey, 1936. 123 pp. Price, $.75.

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

Vengeful Providence—Two intoxicated hunters somehow killed, cooked, and ate a rabbit, soon sickened with tularemia, and died. The moral which health educators will have to publicize seems to be: if you must hunt rabbits, hunt them sober.

AMOSS, H. L., and SPRUNT, D. H. Tularemia. J.A.M.A. 106, 13:1078 (Mar. 28), 1936.

Preventing Intranasal Infections—Picric acid in about ½ per cent dilution, instilled into the nostrils of monkeys and mice prevented intranasal infection with poliomyelitis and encephalitis viruses. The prophylactic had no injurious effect upon mice, monkeys or men.

ARMSTRONG, C., and HARRISON, W. T. Prevention of Experimental Intranasal Infection with Certain Neurotropic Viruses by Means of Chemicals Instilled into the Nostrils. Pub. Health Rep. 51, 9:203 (Feb. 28), 1936.

Path of Polio Invasion—Picric acid instilled intranasally tends to protect against intravenous (as well as intranasal) inoculation with poliomyelitis virus, thus apparently confirming the contention that intravenously introduced polio virus gains entrance to the central nervous system via the olfactory tract.

ARMSTRONG, C. Prevention of Intravenously Inoculated Poliomyelitis of Monkeys by Intranasal Instillation of Picric Acid. Pub. Health Rep. 51, 10:241 (Mar. 6), 1936.

Unto the Third Generation—Babies of mothers vaccinated in the recent past were more difficult to vaccinate successfully under the age of 4 months than were those of mothers not recently protected against smallpox. The author wonders whether continuing generations of vaccinated mothers will not finally achieve a smallpox immune people.

BENNETT, J. Parental Vaccination and Transmissible Immunity. Pub. Health, 49, 6:216 (Mar.), 1936.

Health Administration and Housing—Recounting the slow growth of the slum clearance program in Great Britain, this paper will not be very comforting to us who have only begun to scratch the surface of this difficult problem. Adequate housing is a health problem, and it behooves American sanitarians to become conversant with what others have done.

CONNAN, D. M. Public Health Administration in Bermondsley. J. State Med. 44, 3:146 (Mar.), 1936.

Ions and Influenza—This paper seems to be a discussion of the possible relationships between the H and OH ions of the blood, thunder, and influenza. This reviewer became lost in the graph showing " the alkaline tide which may markedly develop in Splanchnic Anabolics upon awakening " and never found out about the thunder.

HAMER, W. H. The Endemic Influenza Prevalence of the Three Years 1933, 1934, and 1935. J. State Med. 44, 3:125 (Mar.), 1936.

" Heart Disease " and Diseases of the Heart—Recording the fact that half the female deaths from heart disease occur after age 69 and one-third of male deaths are in the same category, the author wisely points out that " heart " deaths among the aged should not be considered in the same light as

heart disease deaths among younger groups.

HEDLEY, O. F. The Picture of Heart Disease Mortality Obtained from Vital Statistics in Washington, D. C., During 1932. Pub. Health Rep. 51, 12:285 (Mar. 20), 1936.

Municipal Sewage Disposal—Briefly reviewing the recent progress in sewage treatment, the author includes discussion of cross-connections, garbage disposal, and other topics of interest to sanitarians.

HYDE, C. G. Recent Trends in Sewerage and Sewage Treatment. Municipal Sanitation, 7, 2:44 (Feb.), 1936.

Vitamin A Deficiencies—Testing children for vitamin A deficiency by measuring their ability to adapt vision to the dark, the authors found a quarter of rural children, more than half the village group, and from half to three-quarters of the urban children (depending upon economic level) deficient in that important vitamin. Feeding vitamin A or carotene developed normal adaptability to the dark.

JEANS, P. C., and ZENTMIRE, Z. The Prevalence of Vitamin A Deficiency among Iowa Children. J.A.M.A. 106, 12:996 (Mar. 21), 1936.

Evidence Against Poliomyelitis Vaccination — Monkeys convalescing from paralytic poliomyelitis are uniformly resistant to reinfection whether or not antibodies are demonstrable in the serum, whereas monkeys vaccinated with inactivated agents remain susceptible. The findings indicate that circulating antibodies are a by-product of infection and are not correlated with resistance. The author believes that vaccination though it may affect antibody formation does not produce immunity.

JUNGEBLUT, C. W. The Mechanism of Immunity in Experimental Poliomyelitis. J. Infect. Dis. 58, 2:150 (Mar.-Apr.), 1936.

When History Was Made—Some interesting reminiscenses of the early production and use of antitoxin in this country by the man who did it.

PARK, W. H. The First Production of Diphtheria Antitoxin in the United States. Canad. Pub. Health J. 27, 3:111 (Mar.), 1936.

Scarlet Fever Prophylaxis—Ten graduated doses of scarlatinal streptococcus toxin achieve immunity with fewer and less severe reactions.

RAPPAPORT, B. Active Immunization to Scarlet Fever with Less Reaction. J.A.M.A. 106, 13:1076 (Mar. 28), 1936.

About California's Flyer in Social Medicine—Provisions of the defeated Californian health insurance bill are explained as well as their probable effect upon public health nursing. A committee will report a new bill for the consideration of the next legislature.

RUSSELL, M. E. Health Insurance in California. Pub. Health Nurs. 28, 3:148 (Mar.), 1936.

The "Kate Adams" heading toward New Orleans. This is one of the few remaining side-wheelers.

NEW ORLEANS, THE CONVENTION CITY

AS New Orleans has been selected for the Annual Meeting of the American Public Health Association to be held October 20 to 23, many, no doubt, will be anxious to learn some points of interest regarding our Convention City.

New Orleans has been called by many tourists, "America's most interesting city." Interest, of course, is a subjective term, and its breadth and depth of meaning depend on personal reactions. To most people the "home town" is obviously and naturally the most interesting place in the world, but next to it there are some places which have always offered to travellers points of unusual interest. Such a place New Orleans has been for over two centuries.

What makes New Orleans deserve its title of "America's most interesting city"?

Is it its most even climate, with a summer temperature average of 78.3° F., and an average in October through March of 60.7° F.?

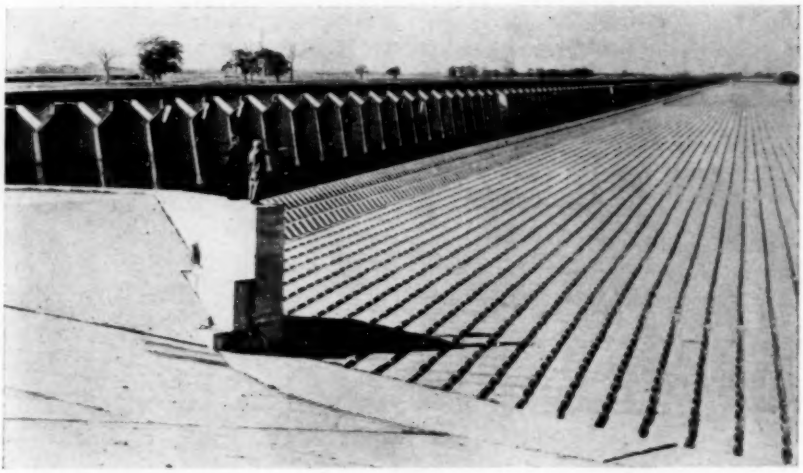
Is it its great port with a water frontage available for shipping of 133 miles, of which 50 are on the great Mississippi River and 11 on the Inner Harbor Navigation Canal?

Is it the great river itself which has a width of 2,200 feet at Canal street, in the center of the city, and a depth of 100 to 150 feet?

Is it the old French and Spanish section with its quaint architecture, its age, and its atmosphere of mystery and romance which steals over tourists and residents alike and charms them into willing and enthusiastic devotees of the "Vieux Carré"?

Is it perhaps the Mardi Gras which has been celebrated annually in New Orleans for over a century, and which traces its heritage from the Lupercalian feasts, well beyond the advent of the Christian era?

Is it perhaps the religious freedom and the remarkable tolerance to opinions and practices which characterize its people? Churches of all denominations and of varied architecture welcome the faithful. Among them are some of the most beautiful and best known in America. Of course,



The Bonnet Carre Spillway—Forever relieving New Orleans of the fear of Mississippi River floods, this great concrete by-pass—the only structure of its kind in the world—was completed in December, 1935, 30 miles above New Orleans, by the U. S. Army engineers. Its total cost was $13,000,000, including three bridges. With twice the flowage capacity of Niagara Falls, 500,000 second-feet, it will keep the water in the river at New Orleans from ever rising above the 20-foot flood level. The Spillway extends a mile and a half along the river and operates to spill the flood waters directly to sea level in Lake Pontchartrain nearby. The picture shows close-up the baffle-plates which break the force of the on-rushing waters.

Public Cotton Warehouse. One of the biggest in the United States. Capacity for 400,000 bales. This is one unit of the model equipment of the publicly owned and operated Port of New Orleans.

Canal Street, New Orleans. Five and one-half miles long, from Eads Plaza on the Mississippi River, to the Lake Front Park on Lake Pontchartrain. This street divides old and modern New Orleans.

the old St. Louis Cathedral, nearly a century and a half old, still stands, a great grey reminder of the past and pledge for the future.

Yes, it is all of these things, plus an intangible something, which is sometimes called personality but in modern parlance is so electrically and definitely described by the simple but significant word "it."

New Orleans was founded in 1718 by Bienville, the "Commandant General for the King" (Louis XIV of France), on a ridge of high land on the Mississippi, and about 115 miles from its mouth. This is the same site which is now occupied by the Vieux Carré.

New Orleans was named after the Duke of Orleans, the regent of France and the patron of John Law and the Company of the West.

Throughout its colorful career of two and a quarter centuries, through French, Spanish, French, American, Confederate, and American domination, in succession, New Orleans has fought through periods of disease, floods, famines, war, and financial depression. In this city, in 1905, the last grand stand of civilization against the dread scourge of yellow fever was made and crowned with success.

As a direct sequel to yellow fever control, as a measure for prevention, the eradication of the Stegomyia (aedes) mosquito was imperatively necessary. The old above ground cypress cisterns, the principal breeding places of these mosquitoes, were destroyed and in their place a fine sparkling water, purified and distributed by a modern filtration plant with a capacity of over 120 million gallons a day, is furnished to the entire city.

This rapid sand filtration plant is one of the points of greatest interest to sanitarians and engineers and will be worth a visit.

To engineers, especially, and to all sanitarians in general, the sewerage

Heart of Old New Orleans. The Place d'Armes, where the Mississippi Valley development had its beginning in 1718, when New Orleans was laid out by Bienville.

Buildings left to right: Cabildo, erected in 1795 and the scene of the transfer of Louisiana from Spain to France, and from France to the United States in 1803; St. Louis Cathedral, built in 1794 on the site of Louisiana's first church; Presbytery, used originally by the Cathedral priests; Pontalba Apartment, one of the two rows of brick apartment style buildings, oldest in this country, erected by the Baroness Pontalba. In the foreground is Jackson Square where in 1769 the flag of Spain displaced that of France; the flag of France displaced that of Spain, and the American flag displaced that of France in 1803. In the center of the square is the Jackson Monument, designed by Clark Mills and unveiled in 1856.

The Cabildo and the Presbytery now house historic and natural history museums.

system will always be a source of wonder and admiration. When it is remembered that the topography of New Orleans is generally flat, and that some spots are below sea level, the difficulty from an engineering standpoint is immediately apparent. In spite of these conditions, for 36 years there has never been a serious interference with the smooth operation of the sewage disposal system.

One of the few remaining original adobe houses built of mud brick inset in cypress timbers with Spanish tile roof.

Malaria, once rampant, is now a rarity; only those cases coming from rural infection are available now for study. The elimination of malaria has been mostly due to the tremendous reclamation of land by drainage which has changed the surrounding territory from marsh lands to farm lands.

The points of particular attraction in New Orleans, to tourists as well as residents, who never tire of their charms, could easily keep one entertained for years, but even in a few days much can be seen and enjoyed.

Andrew Jackson's battlefield of Chalmette, with its monument to commemorate his victory over the heroes of Waterloo in 1815, lies just on the

edge of the city and can be reached in less than an hour.

The City Park, now one of the largest in the country, where, under the spreading oaks, many affairs of honor were settled in "ante bellum" days, is reached in 15 minutes from the hotels. Audubon Park, with its zoo, aquarium, golf links, and natural and cultivated beauty, is reached in 30 minutes from the center of the city.

Just across from the main entrance, on St. Charles Avenue, to Audubon Park are situated Tulane and Loyola Universities, beautiful in architectural arrangement and grounds, and noted centers of culture and education.

From the man-made fortifications at the end of Audubon Park, the hill-like levees, which hold the mighty Mississippi River in check, a wonderful view of this muddy torrent may be had, as it winds its tortuous way to the Gulf of Mexico.

From a tourist standpoint the old quarter, or the Vieux Carré, as it is affectionally called by all, is probably the greatest magnet for visitors. Here in an area of about 70 city squares are situated almost 60 spots of historic interest.

The Spanish Arsenal, behind the Cabildo, was built by the Spanish Governor in 1770. It is architecturally one of the most distinctive buildings in the Old Quarter. It is now part of the Louisiana Historical Museum.

It is obviously impossible in this article to describe all the interesting spots in the Vieux Carré; indeed it would take a gifted word painter to convey even dimly the subtle charm, the hints of romance, and the reflection of deeds of valor and chivalry, that some of the age worn but still substantial monuments possess.

The Place d'Armes, now called Jackson Square, ruled over by the majestic St. Louis Cathedral, stands just back of the river banks in the center of the Vieux Carré. Flanking the Cathedral on either side are the Cabildo and the Presbytere, each of which is now used as a museum. In the Cabildo the transfer of Louisiana from France to the United States of America took place in 1803. On either side of Jackson Square the red brick Pontalba buildings, America's first apartment buildings, with their beautiful iron work railings, form a fitting framework for this beautiful section. A military air, accentuated by the famous equestrian statue of Jackson, which graces the central spot of the square, still permeates the atmosphere of this delightful and historic spot.

The old Ursulines Convent, now a parish presbytery, is just a few squares down from the Cathedral and is reputed to be the oldest building extant in the whole Mississippi Valley. It is over 200 years old.

The church of St. Anthony of Padua, known to old Creoles as the "dead church," because in yellow fever times all funerals were held there, built in 1826, is of particular interest. Just behind it lies the "old" St. Louis Cemetery, one of the best known and oldest in the United States. Here,

graves of settlers and inhabitants before the period of American domination, crumbling and time worn, still show inscriptions and constitute a never failing source of awe and interest to visitors.

The French Market, the Mint Building, the Louisiana Bank, the Bank of the United States, the Haunted House, Madame John's Legacy, and many other places are the meccas of never ending pilgrimages.

The hotels and "skyscrapers" of the modern city offer an imposing contrast to the Old Quarter. Over 3,500 first class hotel rooms are available, many air conditioned; in addition, thousands of other rooms are available.

Throughout the year, and throughout the city, beautiful flowers greet the pleased eye of the visitor. Flowers of all varieties from the humblest daisy to the proud orchid grow and thrive in New Orleans.

Above the city, a magnificent spillway, costing millions of dollars has been completed, and stands as a guarantee against any possibility of flood damage to New Orleans.

The new combined highway and railroad bridge is located just beyond the upper city lines. It cost $13,000,000 and completes a link in the Old Spanish Trail. It is the 29th bridge across the Mississippi and is the longest and finest of them all. It is toll free.

Crossing the bridge and following the old Spanish trail, within a couple of hours in an automobile or by bus, the Evangeline country, famous in poetry and prose, is comfortably reached. This is the land of the Atakapas, the land which inspired in Longfellow these lines:

Interior view of one section of a transit shed, showing the wide diversity of products handled at the Port of New Orleans

Beautiful is the land with its prairies and forest and fruit trees;
Under the feet a garden of flowers, and the blue of heavens
Bending above, and resting its dome on the walls of the forest.
They who dwell there have named it the "Eden of Louisiana."

Of course, there is not time to tell of the "year round" golfing, and boating, and fishing in the city limits of New Orleans; of the wonderful educational institutions and hospitals; of the social life—the balls, the Carnival, the racing season, the mid-winter sports carnival and many other inviting prospects for intended visitors.

New Orleans has a new commodious auditorium, one of the finest in the United States, ample for even the largest convention.

Above all, there is that indescribable "camaraderie" that natives seem born with, and new arrivals soon acquire, that makes for that atmosphere of friendliness and sociability which is an acknowledged quality of the "city care forgot," the Crescent City, New Orleans.

ASSOCIATION NEWS

AMERICAN PUBLIC HEALTH ASSOCIATION
SIXTY-FIFTH ANNUAL MEETING
NEW ORLEANS, LA.
OCTOBER 20–23, 1936

NEW ORLEANS EXECUTIVE COMMITTEE

Dr. J. M. Batchelor, Superintendent of Public Health, *General Chairman*
Dr. J. A. O'Hara, President, Louisiana State Board of Health
Dr. W. H. Seemann, State and City Bacteriologist. *Chairman, Publicity Committee*
Dr. Rigney D'Aunoy, Secretary, Medical Faculty, Louisiana State University, Medical Center. *Chairman, Scientific Exhibits Committee*
Dr. A. E. Fossier, Director, Public Health Education. *Chairman, Entertainment and Reception Committee*
J. H. O'Neill, State Sanitary Engineer. *Chairman, Meeting Rooms Committee*
Dr. W. H. Perkins, Director, Department of Preventive Medicine, Tulane Medical College.
Dr. C. C. Dauer, Assistant Professor of Preventive Medicine, Tulane Medical College. *Chairman, Registration and Information Committee*
C. L. Clay, State Analyst. *Chairman, Inspection Trips Committee*
Mrs. Charles F. Buck, Jr. *Chairman, Woman's Entertainment Committee*
Hon. A. Miles Pratt, Commissioner of Public Finances.
Dr. H. W. Kostmayer, President, Louisiana State Medical Society.
Dr. J. A. Henderson, Secretary-Treasurer and Chief Sanitary Officer, City Board of Health. *Chairman, Finance Committee. Treasurer*
Charles J. Ball, Assistant Superintendent of Public Health. *Secretary of Executive Committee*

WESTERN BRANCH A.P.H.A.

MEMBERS of the Association planning to attend the Seventh Annual Meeting of the Western Branch in Vancouver and Victoria, June 24 to 27, will be interested in the following travel information supplied by Dr. William P. Shepard, Secretary:

Vancouver may be reached by the Canadian National Railway through Winnipeg, Saskatoon, Wainright Buffalo Park, Edmonton, Jasper National Park, and the Canadian Rockies; by the Canadian Pacific by way of Winnipeg and Regina; or from Minneapolis to Moose Jaw, thence through Calgary, Banff, Lake Louise, and Rocky Mountain Park; also over the Great Northern by way of Minneapolis, Chicago, Havre, Glacier National Park, Spokane, and Everett. One may leave Minneapolis at 9:25 A.M. on a Saturday, arriving at Vancouver at 2:00 P.M. on Monday.

From Vancouver, the famous triangle tour may be taken, going by boat to Prince Rupert, just south of the Alaskan boundary, and back east by rail.

For those coming from the South, the Great Northern makes direct connections with the Southern Pacific at Portland and runs two trains a day from Seattle to Vancouver, one leaving at 8:05 A.M. and arriving at 2:00 P.M., another leaving at 5:00 P.M. and arriving at 10:15 P.M. The inter-coastal passenger steamship lines will probably be operating in June, and those who wish may enjoy an ocean voyage.

APPLICANTS FOR MEMBERSHIP

The following individuals have applied for membership in the Association. They have requested affiliation with the sections indicated.

Health Officers Section

Albert L. Allen, M.D., University of North Carolina, Chapel Hill, N. C., Student—Health Officer Appointee

Franklin V. Boyd, M.D., Lake Providence, La., Director, East Carroll Parish Health Unit

George M. B. Bradshaw, M.D., Panama, N. Y., Health Officer

Irmel W. Brown, M.D., City Hall, Kalamazoo, Mich., Director of Public Health and Welfare

W. D. Burkhalter, M.D., Rockford, Ala., Coosa County Health Officer

Jose Chaves, M.D., Health Dept., San Juan, P. R., Director, Public Health Units

Isadore Cohn, M.D., 771 West End Ave., New York, N. Y., District Health Officer, New York City Dept. of Health

George R. Collins, M.D., East Main, Avon, N. Y., Health Officer

Edwin L. Crosby, M.D., 3000 Reisterstown Rd., Baltimore, Md. (temporary leave of absence), Epidemiologist-in-training, New York State Dept. of Health

Patrick H. Fleming, M.D., 311 S. Main St., St. Martinsville, La., Director, St. Martin Parish Health Unit

Frank K. Harder, M.D., City Hall, Cincinnati, O., Assistant Commissioner of Health

Walter N. Kirkman, State Dept. of Health, Baltimore, Md., Chief, Division of Personnel and Accounts

Wilbur A. McPhaul, M.D., Box 210, Jacksonville, Fla., State Health Officer

Erastus L. Miller, M.D., P. O. Box 327, Jena, La., Director, La Salle Parish Health Unit

Raymond J. Pieri, M.D., Medical Arts Bldg., Syracuse, N. Y., Health Officer, Geddes, N. Y.

Colonel Henry C. Pillsbury, M.D., Army Medical Center, Washington, D. C., Medical Corps, U. S. Army

Edwin W. Sigler, M.D., Cadiz, Ky., Director, Trigg County Health Dept.

John A. Skladowsky, M.D., City Health Dept., Baltimore, Md., Medical Health Officer

Morton Torrance, M.D., Maple St., Harpursville, N. Y., Health Officer, Colesville, N. Y.

James A. Whitaker, M.D., Rocky Mount, N. C., Health Officer

Laboratory Section

Harold A Ansley, M.B., D.P.H., General Hospital, Hamilton, Ont., Canada, Assistant in Public Health and Pathology

Isadore R. Asen, B.S., 33 Lincoln Park, Newark, N. J., Director, Clinical Laboratory, Newark, N. J.

James Bell, M.D., Provincial Laboratory, Fort William, Ont., Canada, Director, Fort William Branch Laboratory, Ontario Dept. of Health

Silas H. Champlin, Heekin Can Co., Norwood, O., Head, Food Research

Natale Colosi, Ph.D., 308 E. 116 St., New York, N. Y., Instructor in Bacteriology, New York University, College of Medicine; Director, Colosi Pathological Laboratories

Izetta Fine, B.S., 816 Oregon Bldg., Portland, Ore., Laboratory Technician, Oregon State Hygienic Laboratory

Carlos M. Garcia, M.D., Calle J. #2, Vedado, Habana, Cuba, Special Sanitary Inspector, Havana Milk Supply

Michael Gerundo, M.D., 209 S. Main, Fort Scott, Kans., Pathologist, Mainstreet Hospital

John A. Killian, Ph.D., 50 E. 41 St., New York, N. Y., Research—biochemistry and nutrition

Moses Kopel, M.D., 1454 Grand Concourse, Bronx, N. Y., Pathologist, Gouverneur Hospital

John L. Lattimore, M.D., 618 Mills Bldg., Topeka, Kans., Director, Lattimore Laboratories

Arthur E. Potts, University of Saskatchewan, Saskatoon, Sask., Canada, Professor of Dairying

Allan C. Rankin, D.P.H., University of Alberta, Edmonton, Alta., Canada, Professor of Bacteriology and Hygiene

Winnifred C. Riddle, Faculty of Dentistry, University of Toronto, Toronto, Ont., Canada, Laboratory Assistant in Biology, Histology, Bacteriology and Pathology

Henry H. Smach, 2530 S. Ridgeland Ave., Berwyn, Ill., Chemist and Bacteriologist, Health Dept.

Manuel S. Tarpinian, 608 Kresge Bldg., Detroit, Mich., Physicians' Service Laboratory

Solomon Weintraub, M.D., 240 E. 79 St., New York, N. Y., Pathologist, Harlem Hospital

Cleveland J. White, M.D., 122 S. Michigan Ave., Chicago, Ill., Associate in Dermatology, Northwestern University Medical School

Alexander S. Wiener, M.D., 520 Crown St.,

Brooklyn, N. Y., Director of Clinical Laboratory

Giuseppe S. Zuccala, 16 Beacon Hills Rd., Port Washington, L. I., N. Y., Director, North Shore Clinical Laboratory

Vital Statistics Section

Marie Di Mario, 2704 University Ave., New York, N. Y., Assistant Supervisor of District Health Records, New York City Health Dept.

Pressley A. Kibbe, M.D., 2000 Tulane Ave., New Orleans, La., State Registrar of Vital Statistics

Manuel A. Perez, 53 Loiza St., Santurce, P. R., Chief Statistician, Health Division, Puerto Rico Reconstruction Administration

Alexander K. Powell, 209 S. Campbell St., El Paso, Tex., Registrar and Statistician, El Paso City County Health Unit

Public Health Engineering Section

John H. Barry, M.D., 2135–45 Rd., Long Island City, N. Y., Assistant Sanitary Superintendent, New York City Dept. of Health

Richard H. Bearden, 50 Morningside, New York, N. Y., Sanitary Inspector, New York City Dept. of Health

Carl J. Bernhardt, 145 Anderson Place, Buffalo, N. Y., Assistant Sanitary Engineer, State Dept. of Health

Angelo Boffi, 10130–126 St., Richmond Hill, L. I., N. Y., Sanitary Inspector, New York City Dept. of Health

James F. Brennan, 1372 Shakespeare Ave., New York, N. Y., Sanitary Inspector, New York City Dept. of Health

William C. Buntin, M.D., Dept. of Health, Staten Island, N. Y., Assistant Sanitary Superintendent

Peter J. Craig, 141–24–183 St., Springfield, L. I., N. Y., Sanitary Inspector, New York City Dept. of Health

William A. Cummings, 67 Green St., Brooklyn, N. Y., Sanitary Inspector, New York City Dept. of Health

John J. Dooley, 409 E. 88 St., New York, N. Y., Sanitary Inspector, New York City Dept. of Health

Michael F. Fitzgerald, 434 E. 67 St., New York, N. Y., Sanitary Inspector, New York City Dept. of Health

Matthew F. Greene, 9010–86 Rd., Woodhaven, L. I., N. Y., Sanitary Inspector, New York City Dept. of Health

Joseph Hardardt, 4397 Martha Ave., Bronx, N. Y., Sanitary Inspector, New York City Dept. of Health

John Heatley, 191–11 Woodhull Ave., Hollis, L. I., N. Y., Sanitary Inspector, New York City Dept. of Health

John Hertel, 1990 Ellis Ave., Bronx, N. Y., Sanitary Inspector, New York City Dept. of Health

Eugene Howard, 102 E. 238 St., Bronx, N. Y., Sanitary Inspector, New York City Dept. of Health

William S. Irving, 3543 Willett Ave., Bronx, N. Y., Sanitary Inspector, New York City Dept. of Health

Joseph M. Jenks, 89–18 146 St., Jamaica, L. I., Sanitary Inspector, New York City Dept. of Health

Peter Johnson, 2228 Amsterdam Ave., New York, N. Y., Sanitary Inspector, New York City Dept. of Health

John Kelly, 1501 Undercliff Ave., Bronx, N. Y., Sanitary Inspector, New York City Dept. of Health

William J. Kirchner, State St., Brooklyn, N. Y., Sanitary Inspector, New York City Dept. of Health

Francis J. Laverty, R.F.D. 164, Briarcliff Manor, N. Y., Assistant Sanitary Engineer, New York City Dept. of Health

Edward H. Leiber, 2113 Quimby Ave., Bronx, N. Y., Sanitary Inspector, New York City Dept. of Health

William J. Mansfield, 95–05–35 St., Jackson Heights, L. I., N. Y., Sanitary Inspector, New York City Dept. of Health

Nathaniel Milbauer, 1634 Popham Ave., Bronx, N. Y., Sanitary Inspector, New York City Dept. of Health

Fanny Z. Mitchell, R.N., 475 King Ave., City Island, N. Y., Sanitary Inspector, New York City Dept. of Health

Meron M. Mogil, 220 Boulevard, New Haven, Conn., Sewage Work, Nustone Products Corp.

James F. Morrison, M.D., 1221 Bergen St., Brooklyn, N. Y., Assistant Sanitary Superintendent, Brooklyn Division, New York City Dept. of Health

Hugh A. Newman, 530 W. 182 St., New York, N. Y., Sanitary Inspector, New York City Dept. of Health

Leroy H. Null, 138–56–223 St., Laurelton, L. I., N. Y., Sanitary Inspector, New York City Dept. of Health

William J. Plunkett, 72 Seaman Ave., New York, N. Y., Sanitary Inspector, New York City Dept. of Health

Nicholas A. Post, 59–27–69 Lane, Maspeth, L. I., N. Y., Sanitary Inspector, New York City Dept. of Health

Edwin Rasenberger, 105–05–188 St., Hollis, L. I., N. Y., Sanitary Inspector, New York City Dept. of Health

Samuel S. Reisman, 3723–18 Ave., Brooklyn, N. Y., Sanitary Inspector, New York City Dept. of Health

Ellsworth Roberts, 1864 Seventh Ave., New York, N. Y., Sanitary Inspector, New York City Dept. of Health

Arthur Rosenberg, 245–96 St., Brooklyn, N. Y., Sanitary Inspector, New York City Dept. of Health

John J. Ryan, Jr., 848 Ninth Ave., New York, N. Y., Sanitary Inspector, New York City Dept. of Health

William Sauer, 8972 Hollis Court Blvd., Queens Village, L. I., N. Y., Sanitary Inspector, New York City Dept. of Health

Conrad C. Sofleiss, 9439–120 St., Richmond Hill, N. Y., Sanitary Inspector, New York City Dept. of Health

Michael Styler, 235 Fort Washington Ave., New York, N. Y., Sanitary Inspector, New York City Dept. of Health

Fred Wasserman, 126 Manet Rd., Newton, Mass., Student, Public Health Engineering, Massachusetts Institute of Technology

William T. Winder, 2555 Mickle Ave., New York, N. Y., Sanitary Inspector, New York City Dept. of Health

Edward Wyckoff, 110 Bay 10 St., Brooklyn, N. Y., Sanitary Inspector, New York City Dept. of Health

Industrial Hygiene Section

Clarence Muehlberger, Ph.D., 222 E. Superior St., Chicago, Ill., Toxicologist, Cook County

Richard T. Page, State Dept. of Health, Charleston, W. Va., Public Health Engineer, Bureau of Industrial Hygiene

Frederick H. Shillito, M.D., 630 W. 168 St., New York, N. Y., Instructor in Medicine in Industrial Hygiene, Columbia University

Food and Nutrition Section

Eva Denzer, 157–08–92 St., Ozone Park, L. I., N. Y., Inspector of Foods, New York City Dept. of Health

Lemoyne C. Kelly, M.D., 133 E. 58 St., New York, N. Y., Assistant Physician, Bureau of Tuberculosis, New York City Dept. of Health

Child Hygiene Section

Sarah S. Deitrick, M.D., C.P.H., U. S. Dept. of Labor, Washington, D. C., Field Consultant, Children's Bureau

Adelaide R. Ross, 720 Mass Ave., Cambridge, Mass., Director of Health, Malden School Dept.

Public Health Education Section

Lindsley F. Cocheu, 205 E. 69 St., New York, N. Y., Head of Dept. of Bacteriology, Clinical Pathology, and Public Health, New York Homeopathic Medical College and Flower Hospital

A. Arthur Feller, M.D., 465 Bedford Ave., Brooklyn, N. Y., Physician in charge of Clinic, New York City Dept. of Health

Elizabeth M. Finigan, 240 S. Goodman St., Rochester, N. Y., Lecturer and Special Investigator for Children's Homes, State Dept. of Health

Dr. Victor Grossi, Bellavista 478, Valparaiso, Chile, S. A., Head of Sanitary Service of Aconqaqui

Carroll J. Roberts, M.D., 2732 Main St., Buffalo, N. Y., Clinical Director, Buffalo City Hospital

Arthur J. Strawson, 1108 Little Bldg., Boston, Mass., Executive Secretary, Massachusetts Tuberculosis League

Public Health Nursing Section

Dorothy Deming, R.N., C.P.H., 50 W. 50 St., New York, N. Y., General Director, National Organization for Public Health Nursing

Mary Lucier, 528 W. 111 St., New York, N. Y., Henry Street Nurse

Margaret E. Newman, Bewley Bldg., Lockport, N. Y., Executive Secretary, Niagara County Health Assn.

Julia B. Paluszak, St. Mary's Hospital, Passaic, N. J., Public Health Nurse

Erna M. Sohmer, R.N., 62 Tallman Ave., Nyack, N. Y., School Nurse

Epidemiology Section

John S. Douglas, M.B., D.P.H., Quarantine Station, Father Point, P. Que., Canada, Quarantine Officer, Dept. of Pensions and National Health

Unaffiliated

Howard M. Freas, M.D., 179 Dwight St., New Haven, Conn., Student

Charles E. Gill, M.D., Westfield State Sanatorium, Westfield, Mass., Senior Physician

Worth L. Howard, 525 W. Market St., Akron, O., Administrator, City Hospital of Akron

Gertrud M. C. Kroeger, 4901 Ellis Ave., Chicago, Ill., Research Assistant, Hospital Administration and Medical Economics, Julius Rosenwald Fund

Charles S. Nelson, 79 E. State St., Columbus, O., Executive Secretary, Ohio State Medical Assn.

MEETING OF THE EXECUTIVE BOARD OF THE ASSOCIATION

A MEETING of the Executive Board was held in Washington, D. C., on April 16 at the conclusion of the Conference of State and Territorial Health Officers with the Surgeon General. All members of the Board were present. Important actions were taken by the Board, among which the following may be mentioned.

Professor C.-E. A. Winslow, who since the organization of the Committee on Administrative Practice in 1920 has been Chairman, presented his resignation which was regretfully accepted by the Board. A resolution in appreciation of Professor Winslow's service to the Association is published herewith.

Eugene L. Bishop, M.D., F.A.P.H.A., and past President of the Association was made Chairman of the Committee on Administrative Practice for the duration of his present term on the committee.

The Board also received with regret the resignation of C. C. Young, D.P.H., as Chairman of the Committee on Meetings and Publications. Dr. Young has been chairman of this committee since 1929. The Board's resolution is carried on the next page.

The Board appointed the Executive Secretary as Chairman of the Committee on Meetings and Publications.

The Board adopted three resolutions which grew out of the memorandum on Authoritative Standards and Association Policy presented by Wade H. Frost, M.D., at the meeting of the Executive Board held December 19, 1935, and published in the April *Journal*.

1. It was voted that committees generally, and especially those dealing with proposed standards, be instructed to record the dissent of individual members to statements and recommendations approved by a majority and, where this affords inadequate expression, to file a minority report.

2. Voted that, with regard to proposals which pass through the Committee on Research and Standards, the Board directs that this committee as a whole or a sub-committee which takes no part in the initiation of any standards review each proposal critically from the standpoint of Association policy and, where there seems to be any probability that legitimate questions may be raised concerning the justification of the proposed standardization, arrange to have the question presented for discussion.

3. The Board directs that, with respect to reports originating in committees of the whole Association, those which propose standard procedures to be promulgated in the name of the Association be required to stand before the Association merely as proposals under consideration for a period sufficient to allow ample time for the preparation of written discussions and their publication before they are presented for action by the governing body.

The Executive Board extended a cordial invitation to the National Organization for Public Health Nursing to consider meeting with the American Public Health Association in 1937.

Robert S. Breed, Ph.D., was appointed, on recommendation of the Laboratory Section, as Association representative to the International Microbiology Congress in London beginning July 25. W. Frank Walker, Dr.P.H., was appointed Association representative to the Advisory Committee of the General Federation of Women's Clubs. The appointment of A. J. Lanza, M.D., of the Industrial Hygiene Section, as Association representative to the Conference on Silicosis and Similar Dust Diseases called by the Secretary of Labor was confirmed.

The Board approved in principle the continuation of the City Health Conservation Contest for 1936 as recommended by the Contest Committee and the Committee on Administrative Practice.

The Board directed that the Committee on Meetings and Publications

review the present status of the schedule as approved by the Governing Council for future meeting places of the Association with a view to a possible revision of this schedule.

Fiorello H. La Guardia, Mayor of the City of New York, petitioned the Board to consider the establishment of a permanent museum of hygiene exhibit following the world's fair planned for New York City. This matter was referred to the Committee on the American Museum of Hygiene.

In considering the Association budget the Board was advised of the fact that substantial additional funds had become available since the beginning of the year for the promotion of certain studies by the Sub-committee on the Evaluation of Administrative Practices and the Sub-committee on Revision of the Rural Appraisal Form. A general recasting of the Association budget for the year was necessary on this account.

The Board was advised that the financial status of the Association was reasonably satisfactory and that it was particularly encouraging to note the increase in membership as a result of efforts put forward by the Committee on Fellowship and Membership this year.

Resolutions Passed by the Executive Board at a Meeting in Washington, D. C., April 6, 1936

C.-E. A. WINSLOW

WHEREAS, Professor C.-E. A. Winslow has served as Chairman of the Committee on Administrative Practice for 15 years, and

WHEREAS, during that period which represents the committee's lifetime he has been its guide and leader, and

WHEREAS, his incalculable contribution of knowledge, enthusiasm and wisdom expended without stint throughout these years has identified the name of Winslow with public health administration for all time, therefore, be it

RESOLVED, that the Executive Board of the American Public Health Association, accepting regretfully his resignation as Chairman of the Committee, record its warm appreciation of his work and its esteem of the man; be it further

RESOLVED, that this resolution be spread upon the minutes, circulated to Professor Winslow's friends and associates and published to the membership of the American Public Health Association in the *American Journal of Public Health*.

C. C. YOUNG

The Executive Board has received with regret the resignation of Dr. C. C. Young as Chairman of the Committee on Meetings and Publications.

In accepting this resignation the Board records with appreciation the constructive services rendered to the Association by the committee under Dr. Young's leadership. During these years the Annual Meetings have been made more serviceable to the members and a new quality of financial independence has been achieved. The *Journal* has been expanded and notably improved, and similar progress has been made among all Association publications.

It is the opinion of the Board that these responsibilities could not have been better handled during this period of decentralized administration than by Dr. Young, to whom the Association will long remain deeply indebted.

NEWS FROM THE FIELD

SUMMER SCHOOL COURSES IN PUBLIC HEALTH

While the following list does not show all universities and technical schools offering summer courses in public health, it represents those who have replied to a questionnaire sent out by the American Public Health Association.

American National Red Cross

Courses in Teacher Training for Home Hygiene Instructors:

University of California, Los Angeles, Calif.—June 27–August 7
Colorado State College, Fort Collins, Colo.—July 11–August 21
University of Minnesota, Minneapolis, Minn.—June 15–July 25
Peabody College, Nashville, Tenn.—June 8–July 15
Pennsylvania State College, State College, Pa.—June 29–August 7
Syracuse University, Syracuse, N. Y.—July 6–August 15

University of California, Berkeley, Calif.

June 29–August 7

General Bacteriology
Child Development
Public Welfare Administration
Supervision in Public Health Nursing
Principles and Practice of Public Health Nursing
Introduction to Educational Psychology
Control of Poverty
Elements of Economics
General Psychology
Elementary Epidemiology *
Elementary Public Health *

* These two courses are offered in the Intersession, May 18–June 26

The Catholic University of America, Washington, D. C.

June 26–August 8

Child Study
Nursing Education
Public Health Nursing
Social Work
Sociology

Columbia University

DeLamar Institute of Public Health, College of Physicians and Surgeons, New York, N. Y.

June 8–26

School Health Supervision—Medical Inspection, Mental Hygiene, and Physical Education

(These courses will not be given unless ten candidates have signified their intention to register before May 1st.)

Teachers College, Columbia University, New York, N. Y.

July 7–August 14

Organization of Health Education in Public Schools
Child Hygiene
Health Education
Health and Physical Education
Health Care of Children
Home and Community Hygiene
Nutrition and Health
Personal and General Hygiene
Public Health Nursing
Public Health Administration
Safety Education Materials and Methods
School Nursing
Teaching Lip-Reading
Sight Saving Classes
Social Hygiene
Psychology of Exceptional (Subnormal) Children
Speech Correction
Speech Correction Clinic

When communicating with these summer schools, refer to the above announcement in the *Journal*

Cornell University, Ithaca, N. Y.

July 6–August 14

Physical Education:
Gymnastics (Women)
Leadership in Community Recreation Program
Health Education:
Mental Hygiene of Childhood
School Health Problems

University of Denver, Denver, Colo.

June 15–August 21

Social Sciences
Speech Conference

Duke University, Durham, N. C.

June 11–July 22

Materials and Methods in Health Education
Personal and School Hygiene

The University of Hawaii, Honolulu, Hawaii

June 29–August 7

Conservation of Sight
Principles of Health Education in School Hygiene

University of Illinois, Urbana, Ill.

June 15–August 8

Physical Education for Men:
Physical Education
Adapted Activities
Program in Extracurricular Sports
Curriculum in Physical Education
Physical Education for Women:
Physical Education
Community Recreation
Team Sports for High School Girls
Physical Education Program for the High School
Methods of Teaching Health
Principles of Body Movement

State University of Iowa, Iowa City, Iowa

June 8–August 20

Hygiene
Nursing
Nutrition
Physical Education

Massachusetts Institute of Technology, Cambridge, Mass.

June 16–July 28

Bacteriology

Medical College of Virginia, Richmond, Va.

June 15–June 27

Sixth Annual Saint Philip Hospital post-graduate clinic for Negro physicians (for physicians from all states)

Michigan State College, East Lansing, Mich.

June 22–July 31

General Bacteriology
Medical Biology Courses
Pathological Bacteriology
Personal Hygiene
Sanitary Science

University of Michigan, Ann Arbor, Mich.

June 29–August 8

School Health Problems
General Hygiene and Public Health
Child Hygiene
Public Health Nursing
Applied Nutrition
Methods and Materials in Health Education
Mental Hygiene
Case Methods in Social Treatment

University of Minnesota, Minneapolis, Minn.

June 15–July 25

Public Health

The University of New Mexico, Albuquerque, N. M.

June 9–August 1

Methods and Materials in Health Education

New York University, School of Education, Washington Square, New York, N. Y.

July 6–August 14

Principles of Public Health Nursing
Supervision in Public Health Nursing
The Teaching Activities of the Public Health Nurse

When communicating with these summer schools, refer to the above announcement in the *Journal*

Home and Community Problems of Tuberculosis
Organization of School Nursing
Methods of Teaching for Health
Child Hygiene
Observation and Practice in Public Health Nursing
A Survey of Physical Defects in Children
Practicum in Rehabilitation of Orthopedic Cases
Adaptation of Physical-Education Activities for the Atypical Individual
Observation and Practice Teaching for Physically Handicapped
The Social Backgrounds of the School Child
Principles of Case Work in the Schools
Field Work and Family Case Work
The Psychology of Childhood
The Psychology of Adolescence

Rutgers University, New Brunswick, N. J.

June 29–August 8

Public Health

Smith College—School for Social Work, Northampton, Mass.

July 8–Sept. 2

Health and Disease
Child Development and Hygiene
Social Aspects of Medicine

Springfield College, Springfield, Mass.

June 29–August 1

Social Science and Character Education
Physical Education:
Physiology and Physiology of Exercise
Corrective and Therapeutic Gymnastics
Olympic Study Tour

Stanford University, Stanford University, Calif.

June 18–August 29

Physical Education and Hygiene

Syracuse University, Syracuse, N. Y.

July 6–August 14

Public Health Nursing
Methods in Teaching Home Hygiene
Case Studies in Public Health Nursing
Mental Hygiene
Psychology
Public Speaking
Nutrition
Health Education for Classroom Teachers
Child Psychology
Public Health Administration
Social Hygiene for Public Health Nurses

University of Virginia, University, Va.

June 15–July 25 (First Term)
July 27–August 29 (Second Term)

Anatomy of the Human Nervous System
Bacteriology, Medical
Biochemistry
Education:
Sex Character Education
Hygiene and Sanitation
Mental Hygiene
Nursing Education:
Curriculum in Schools of Nursing
Supervision in Hospitals and Schools of Nursing
Institute for Doctors' Helpers

University of Washington, Seattle, Wash.

June 17–July 24 (First Term)
July 27–August 27 (Second Term)

Nutrition
Bacteriology
Physical Education Methods
Principles of Physical Education
Introduction to Public Health Nursing
Principles of Public Health Nursing
Supervision in Physical Education
Principles in Health Education
Organization and Administration of Physical Education

Washington University, St. Louis, Mo.

June 15–July 24

Sociology and Social Work
Education
Psychology
Public Speaking

Wayne University, Detroit, Mich.

June 22–August 15

Public Health Nursing in Maternity, Infancy and Preschool Services
School Nursing
Principles of Public Health Nursing
Rural and Industrial Nursing (not offered for less than 25 students)

When communicating with these summer schools, refer to the above announcement in the *Journal*

Family Social Work (not offered for less than 25 students)
Psychology
Sociology

University of West Virginia, Morgantown, W. Va.

June 10–August 27

Playground and Community Recreation
Public School Health
Problems in Physical Education
History of Physical Education

Western Reserve University, School of Applied Social Sciences, Cleveland, Ohio

June 22–July 31

Summer Program in Public Health Nursing:
Practical Sociology
American Society
Rural Communities
Rural Government
Seminar in Rural Public Health Nursing

University of Wisconsin, Madison, Wis.

June 27–August 7

Anatomy
Bacteriology
First Aid to the Injured
Tests and Measurements in Physical Education
Health Education in Schools
Play, Recreation and Leisure Time Problems
Physical Examinations and Therapeutics
School Health and Hygiene
Physical Therapy
Effects of Physical Activity on the Body (Physiology of Exercise)

Thomas Parran, Jr. M.D.

THOMAS PARRAN, JR., M.D., F.A.P.H.A., took the oath of office as Surgeon General of the U. S. Public Health Service on April 6, succeeding Hugh S. Cumming, M.D., F.A.P.H.A. Dr. Parran was nominated by President Roosevelt in March, when the matter was referred to the Senate for confirmation.

Dr. Godfrey New York State Commissioner of Health

EDWARD S. GODFREY, JR., M.D., F.A.P.H.A., Assistant Commissioner of Health of New York State, was nominated on April 6 by Governor Herbert H. Lehman to succeed Thomas Parran, Jr., M.D., as State Commissioner of Health.

Dr. Godfrey was appointed a sanitary supervisor of the department in July, 1917, by Hermann M. Biggs, M.D., who was then Commissioner of Health, and he subsequently served as epidemiologist, and later as director of the division of communicable diseases, until 1931, when he was appointed director of local health administration, and 3 years later was made Assistant Commissioner of Health in charge of this bureau.

Dr. Francis X. Mahoney

FRANCIS XAVIER MAHONEY, M.D., was born in Boston, Mass., July 6, 1872. He died in Boston, January 14, 1936.

After receiving his degree of M.D. at Harvard Medical School, in 1902, he continued his medical studies a year in Vienna. In 1905 he took a postgraduate course at Harvard University.

He was appointed a member of the Boston Board of Health in 1910. When the Board of Health was superseded by a Health Commissioner in 1915, Dr. Mahoney became the first Commissioner, which position he held until his death, with the exception of the period from August 1, 1918, to February 23, 1922.

Dr. Mahoney was sympathetic with efforts to bring public health officials in closer touch with the public. He established the first Health Unit in Boston in 1916, primarily to promote public education in matters relating to

health and also to secure more effective coördination between health officials and agencies designed to promote public welfare. He obtained in 1923 the approval of the Trustees of the Robert E. White Fund to utilize its income to extend further this idea, and he thus led to the creation of Boston's present chain of Health Units.

Boston's water supply was in the hands of a State Commission, but Dr. Mahoney succeeded in prohibiting the use of lead in all new water main connections in Boston. He won a long fight against commercial interests almost single-handed and drove out of Boston the traffic in old eggs for food purposes.

He was one of the first to recognize officially that changes in milk which progressively affect its nutritive properties, begin promptly, and insisted that the deterioration be delayed by keeping it at a low temperature and by lessening opportunities for bacterial contamination. His dairy inspectors were chased off farms with pitch forks and thrown off milk trains, but eventually they were considered helpful both by producers and distributors.

He contended from the first that "the only safe milk is pasteurized milk." He insisted that "certified milk" should be pasteurized. His views came to be generally recognized. From less than 30 per cent in 1910, he finally saw over 98 per cent of the milk sold in Boston pasteurized. Then came his fight in behalf of the milk consumers of Boston to preserve their right to prescribe the standard of milk which might be marketed in Boston, and to prevent such authority from being turned over for political reasons by the Legislature to political appointees without local responsibility.

Dr. Mahoney was a member of the American Medical Association, the International Health Officers' Association, the Massachusetts Medical Society, the Massachusetts Association of Boards of Health, and of the Boston Tuberculosis Association, Boston Council of Social Agencies, and Honorary President of the Boston Health League. He became a member of the American Public Health Association in 1912 and was elected to Fellowship in 1922.

DR. FLEMING AT MC GILL

DR. A. Grant Fleming, F.A.P.H.A., Director of the Department of Public Health and Preventive Medicine of McGill University, Montreal, Quebec, has been appointed Dean of the Faculty of Medicine at McGill for a 3 year period beginning September 1, 1936.

With Dr. Fleming's accession to the deanship, the Dominion of Canada will have public health men as deans of the two largest medical schools, Dr. J. G. FitzGerald, F.A.P.H.A., being Dean of the Faculty of Medicine at the University of Toronto.

DR. GARLICK

JOSEPH B. Garlick, M.D., well known physician of Schenectady, died recently in Florida following a heart attack.

Dr. Garlick had been Health Officer of the city of Schenectady on a part-time basis from 1916 to 1918. In August, 1934, he was appointed acting Commissioner of Health to fill the unexpired term of the late Dr. MacDonald, and was reappointed for a 4 year term in 1935. During his recent tenure he had taken active part in the promotion of venereal disease clinic facilities and of the pneumonia control program.

He was a member of the Pan-American Medical Society, American Medical Association, the New York State Medical Society, and the Schenectady County Medical Society of which he was a past president; and has been a member of the A.P.H.A. since 1935.

DR. ROGER PERKINS

DR. Roger Perkins, 62 years old, pathologist and bacteriologist and Professor Emeritus of Western Reserve University, died March 28 after a long illness.

He had made his home at South Kingstown, R. I., since moving in 1930 from Cleveland, O., where he had served on the faculty of Western Reserve Medical School since 1901. He had served as city bacteriologist in 1906, 1907, 1913, and 1914; and from 1914 until 1923 he was chief of the Bureau of Labor, Division of Health. He was named a trustee of the Brush Foundation in Cleveland in 1931.

During the World War Dr. Perkins served as a member of the American Red Cross Commission to Rumania, as Medical Associate to the Scientific Attache in the American Embassy in Paris, and, in 1919, as Director of the Sanitation Division of the American Red Cross Commission to the Balkan States.

He has been a member of the A.P.H.A. since 1902, a Fellow since 1922, and a Life Member since 1929.

DR. PARK

THE *Canadian Public Health Journal* for March, 1936, has an article, "The First Production of Diphtheria Antitoxin in the United States," by William H. Park, M.D., whose work in diphtheria is so well known. It is said that this record has not been previously published.

It also contains an editorial with a well deserved tribute to Dr. Park.

QUALIFICATIONS FOR NURSES

THE Minimum Qualifications for Those Appointed to Positions in Public Health Nursing have been revised by the Committee on Education of the National Organization for Public Health Nursing and the Committee on Professional Education for the next 5 year period. These revised qualifications were approved by the Governing Council of the A.P.H.A., and are now available in reprint form at the Association office.

MALARIA CONGRESS IN SPAIN

THE Third International Congress on Malaria will be held in Madrid, October 12–18, 1936, "under the high patronage of His Excellency the President of the Spanish Republic."

Dr. Gustavo Pittaluga, of Madrid, Honorary Fellow of the A.P.H.A., is President.

All correspondence is to be addressed to Dr. Manuel G. Ferradas, Secretary, Instituto Nacional de Sanidad, Calle de Recoletos, 19, hotel, Madrid.

ALABAMA HAS NEW HEALTH UNIT

RECENTLY a full-time health unit was set up in Coffee County, Ala., bringing the total of full-time health departments in the state to 57, leaving 10 counties without organized health service.

Dr. Henry T. Donovan, of Elba, Ala., is the Health Officer.

MISSISSIPPI HAS NEW HEALTH UNIT

THE Health Department of Marshall County, Miss., has recently been organized on a full-time basis. Dr. Vernon B. Harrison, formerly Health Officer of Coahoma County, has been appointed Health Officer of the new unit.

SILICOSIS CONFERENCE IN WASHINGTON

A CONFERENCE was called by Miss Frances Perkins, Secretary of Labor, in Washington, on April 14, on Silicosis.

The Industrial Hygiene Section of the A.P.H.A. and the Association at large were represented at the conference by A. J. Lanza, M.D., F.A.P.H.A., and Henry H. Kessler, M.D., Fellow A.P.H.A., respectively. Twelve Fel-

lows of the Section were in attendance and these names were well represented among the major committee appointments.

FLORIDA HEALTH UNIT

A PUBLIC health unit has been established in Broward County, Fla., with Dr. Paul G. Shell, formerly of Marianna, in charge. The new unit will be maintained by Lauderdale, Hollywood, and Broward Counties, their combined contribution of $5,000 to be matched by a similar amount from the state and federal governments.

Headquarters will be in Hollywood, Fla.

DEATH

MABEL LEILANI SMYTH, member A.P.H.A., of Kalihi, Hawaii, died March 31. She was President of the City County Nurses' Association, and was for the past 8 years Director of Public Health Nursing in the Board of Health of the Territory of Hawaii, and prior to that was head nurse at Palama Settlement, having been the first director of nurses at that institution.

PERSONALS

JOHN E. WORDEN, M.D., has been appointed State Health Officer of Nevada, with headquarters at Carson City, succeeding Edward E. Hamer, M.D., F.A.P.H.A.

DR. HARRY F. WILSON, member A.P.H.A., Health Officer of Dillon and Marion Counties, S. C., has been appointed Director of the Industrial Hygiene Division of the State Board of Health of South Carolina.

DR. MAURICE C. HALL, who was chief of the Zoölogical Division of the Bureau of Animal Industry, of the Department of Agriculture, Washington, D. C., has been transferred to the National Institute of Health, where he will be chief of the Division of Zoölogy.

CHARLES G. POWER, of Quebec, a lawyer and a member of Parliament at various times since 1917, has been appointed Minister of Pensions and National Health for Canada.

WILLIAM D. BURKHALTER, M.D., member A.P.H.A., of Nashville, Tenn., was recently appointed Health Officer for the newly organized Health Department of Coosa County, Ala., with headquarters at Rockford.

LORENZO L. PARKS, M.D., member A.P.H.A., of Auburn, Ala., has been appointed Health Officer of Edgecombe County, N. C.

ALONZO E. HARDISON, JR., M.D., member A.P.H.A., of Maryville, Tenn., has been appointed Director of the Blount County Health Department to succeed Dr. Owen F. Agee, resigned.

DR. DAVID T. BUNDY, of Tyler, Tex., was recently named Health Officer of Smith County, succeeding the late Dr. Benjamin T. Bryant.

DR. ROBERT E. HARPER, of Moulton, Ala., has been named Health Officer of Colbert County, succeeding Dr. George W. Warwick, of Birmingham.

DR. SAMUEL B. MCPHEETERS, of Charlotte, N. C., has been appointed Health Officer of Wayne County.

DR. MAURICE L. PETER, of Blackwell, Okla., has been appointed Health Officer of Kay County, to succeed Dr. Luther H. Becker.

DR. MARSHALL D. CARNELL, of Okmulgee, Okla., has been appointed Health Officer of Okmulgee County to succeed the late Dr. John J. C. Rembert.

DR. JOHN L. BURKHARDT, for many years City Health Officer of Big Rapids, Mich., has been appointed Postmaster.

DR. JOHN W. DARROUGH, of Everett, Wash., was recently appointed Health Officer of Everett.

DR. JOHN W. STEVENSON, of Hoquiam, has been appointed Health Officer of Grays Harbor, Wash.

CONFERENCES AND DATES

May 1, May Day–Child Health Day.

May, Food Industries Exposition, Oakland, Calif.

May 1, Annual Meeting of the Society of Illinois Bacteriologists, Allerton Club House, Chicago, Ill.

May 1–4, 60th Annual Meeting of the American Assn. on Mental Deficiency, Hotel Jefferson, St. Louis, Mo.

May 3–6, International Society for Crippled Children, St. Louis, Mo.

May 4–9, First Joint South Dakota Inter-Related Medical Meeting: State Medical Association; State Dental Association; State Veterinarians; State Nurses Association; State Hospital Association; State Pharmaceutical Association. Sioux Falls, S. D.

May 10, Mother's Day.

May 10–12, Medical Women's National Association, Kansas City, Mo.

May 11–15, American Medical Assn. Convention, Kansas City, Mo.

May 11–15, 40th Annual Convention—National Congress of Parents and Teachers, Hotel Schroeder, Milwaukee, Wis.

May 12, American Heart Association, Kansas City, Mo.

May 14–16, American Water Works Association—Pacific Northwest Section, Aberdeen, Wash.

May 19–21, Annual Conference of New York State and Local Committees on Tuberculosis and Public Health, State Charities Aid Association, Biltmore Hotel, New York, N. Y.

May 24–30, American Association of Hospital Social Workers, Atlantic City, N. J.

May 24–30, National Conference of Social Work, Ambassador Hotel, Atlantic City, N. J.

May 25, Twentieth Annual Meeting of the New York State Association of Public Health Laboratories, Vassar College, Poughkeepsie, N. Y.

May 25–27, Medical Library Association, Rochester, Minn.

May 26–30, American Society for the Hard of Hearing, Boston, Mass.

June 5, 6, Eleventh Annual Meeting of the New England Health Education Association, Massachusetts Institute of Technology, Cambridge, Mass.

June 6–Nov. 29, Medical Exhibit, "Story of Life," in Texas Centennial Exposition, Dallas, Tex.

June 8–12, Annual Convention of American Water Works Association, Hotel Biltmore, Los Angeles, Calif.

June 10, Spring Meeting of the New York State Sewage Works Association, Lido Beach, L. I., N. Y.

June 15–Aug. 21, Speech Conference, University of Denver, Denver, Colo.

June 16–18, Tenth Iowa Conference on Child Development and Parent Education, Iowa City, Iowa.

June 20–26, Canadian Medical Association, Victoria, B. C.

June 21–26, Biennial Convention of the American Nurses' Association, the National League of Nursing Education, and the National Organization for Public Health Nursing, Los Angeles, Calif. Headquarters will be, respectively: A.N.A., and N.L.N.E., Ambassador Hotel; N.O.P.H.N., Biltmore Hotel.

June 22–25, National Conference on Visual Education and Film Exhibition (DeVry Foundation). Francis W. Parker School, Chicago, Ill.

June 22–25, Annual Meeting of the National Association of Master Plumbers, Hotel Statler, Buffalo, N. Y.

June 23–25, Annual Conference of Health Officers and Public Health Nurses, Saratoga Springs, N. Y.

June 24–27, Seventh Annual Meeting, Western Branch, A.P.H.A.—meeting simultaneously with Canadian Public Health Association—Vancouver and Victoria, B. C.

June 27–July 2, National Education Association, Portland, Ore.

July, Third International Conference on Social Work Problems, London.

July 6–10, 29th Annual Meeting of the American Home Economics Association, Olympic Hotel, Seattle, Wash.

July 6–11, The Royal Sanitary Institute, Southport, England.

July 13–17, American Dental Association, San Francisco, Calif.

July 18–23, Third International Open Air School Congress, Bielefeld and Hanover, Germany.

July 25–Aug. 1, The Second International Congress of Microbiology, London.

Aug. 11–14, American Veterinary Medical Association, Deshler-Wallick Hotel, Columbus, O.

Aug. 16–22, National Hospital Association, Philadelphia, Pa.

Aug. 16–22, National Medical Association, Philadelphia, Pa.

Aug. 31–Sept. 12, Harvard Tercentenary Conference of Arts and Sciences, Cambridge, Mass.

Sept. or Oct., National Safety Council Congress, Atlantic City, N. J.

Sept. 7–10, International Union Against Tuberculosis, Lisbon, Portugal.

Sept. 14–18, New England Water Works Association, New York.

Sept. 15–30, First International Congress of Sanatoria and Private Nursing Homes; Margitsziget, Sanatorium, Budapest, Hungary.

Sept. 23–25, Annual Meeting of the New York State Association of Dairy and Milk Inspectors, Van Curler Hotel, Schenectady, N. Y.

Sept. 28–30, Public Works Conference of American Society of Municipal Engineers & International Assn. of Public Works Officials, Toronto, Ont.

Sept. 28–Oct. 2, American Hospital Association, Cleveland, O.

Oct. 10–18, National Dairy Show, Dallas, Tex.

Oct. 12–17, The Dairy Industries Exposition, Atlantic City, N. J.

Oct. 12–18, Third International Congress on Malaria, Madrid, Spain.

Oct. 17–25, Centennial Exposition Dairy Show, Atlantic City, N. J.

Oct. 20–23, Sixty-fifth Annual Meeting of the American Public Health Association, New Orleans, La. Meetings Headquarters, Municipal Auditorium; Residence Headquarters, Hotel Roosevelt.

Oct. 21–23, Ontario Hospital Association, Toronto, Ont.

Oct. 26–28, National Association of Exterminators & Fumigators, Cleveland, O.

Oct. 29–31, Annual Meeting of the Association of Military Surgeons, Detroit, Mich.

Nov. 9–12, Association of Dairy, Food and Drug Officials of the United States, Miami Biltmore Hotel, Coral Gables, Fla.

Nov. 11–13, Refrigeration Service Engineers Society, Hotel Gayoso, Memphis, Tenn.

Nov. 17–20, Southern Medical Association, Baltimore, Md.

Dec. 28–30, Society of American Bacteriologists, Indianapolis, Ind.

Dec. 28, 1936–Jan. 2, 1937, American Association for the Advancement of Science, St. Louis, Mo.

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